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ABSTRACT

Assessment of student progress in community colleges is necessary for several reasons; among them are accountability to the public, improvement of decision-making for both students and educators, and planning and evaluation of curricula. This sourcebook focuses on various types of student progress--vocational, social, academic, transfer--and on problems associated with their assessment, reviews techniques varying from tests of all kinds to interviews and surveys that have been utilized to date, and suggests alternative ways in which student progress can be measured. The articles presented deal with alternative modes of assessing academic achievement, evaluating student readiness for further education, the use of different assessment techniques and policies for evaluating different types of transfer students, evaluating student preparation for work and the efficacy of occupational programs, important affective and socioeconomic considerations in assessing student progress, and evaluating the college in terms of its service to the community. A review of additional pertinent literature and a bibliography are included. Contributors include: Oscar Lenning, Clifford Lunreborg, S. V. Martorana, Richard Rinehart, Brent Mack Shea, Jane Matson, and Leonard Baird. (JDS)

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assessing student academic and social progress

leonard l. baird
issue editor

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New Directions for Community Colleges
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Leonard L. Baird, Issue Editor

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editor's notes

The contributors to this volume on assessing student progress and development, among many important points, focus on one overriding point: Decisions made by and about students should be considered from a wide variety of perspectives regarding their development. For example, a proposed college program should be evaluated in terms of its role in promoting the welfare of different groups of students (Shea) and the need for it in the community served by the college (Matson). The college needs to identify the criteria by which the program will be evaluated in promoting student welfare, including the depth and breadth of student learning (Lenning), and the degree to which it prepares the students for further education (Lunneborg) or successful employment (Martorana). Then, when the program has been underway for several years, the success of graduates of the program as employees (Matson and Martorana) or students in four-year colleges (Rinehart) needs to be assessed.

Similarly, when students seek counseling, the advice given them will be much better if it sensitively reflects knowledge of their backgrounds and situations (Shea), the goals they seek in attending community college, the fit between their goals and the needs of the community (Matson), and the likelihood that they will succeed in particular occupations (Martorana) or four-year colleges (Rinehart).

As these examples suggest, assessments of the progress of students toward various goals can improve the decisions of several groups. Students can plan their educational and occupational careers best with an appreciation of their chances of success in the pursuit of one course of action or another. Colleges can best plan their programs, organize their curricula, attempt to meet the needs of important groups, and evaluate the success of their efforts when they have systematic and comprehensive information about the progress of their students. And the college's constituency can assess the success of the college in meeting the needs of its students and the community itself only on the basis of evidence of needs and of progress toward their resolution.

The contributors to this volume outline a variety of approaches and techniques to assess student progress. Together, they provide a comprehensive overview of the kinds of information

needed to understand alternatives, plan programs, and evaluate their consequences. Their suggestions and recommendations should have immediate utility for decision makers in community colleges.

Leonard L. Baird
Issue Editor

A variety of methods for assessing student achievement is available for college staffs to use in making better decisions in eight different types of situations.

assessing student progress in academic achievement

oscar t. lenning

The function of teaching or instruction has been especially emphasized in community colleges, and the focus of this paper is on assessing the results of instruction on students through evaluation of their academic progress. Instruction includes more than what happens in the classroom; it includes all *planned* program activities that are intended to contribute to student learning, whether they occur inside or outside of the classroom, and whether they occur on or off the campus. More and more community colleges are using extensive field work, on-the-job training and other off-campus experiences to supplement and reinforce classroom learning. As a result, administrators and faculty members face new policy decisions in assessing student academic achievement.

academic achievement in the community college

The term *academic achievement* typically denotes, in the minds of most academicians, increased student knowledge, understanding, and intellectual skills (including written and oral communication skills). Academic achievement in the community college

certainly includes all these forms of cognitive development, but proponents of the "community college philosophy" (Gleazer, 1968) would include much more. From their point of view, academic achievement includes a variety of different kinds of skills, depending on the particular program, from flower arranging, playing bridge, welding, or learning to relax to highly complex technical skills in theoretical arts and sciences. The major objective of some courses is to help students be receptive to new ideas, clarify their values, and develop mature attitudes, habits (such as punctuality), interests, and appreciations, and evidence of such development can be considered academic achievement. If, as Kohlberg (1973) claims, attitudes and values can be taught in college courses, such achievement can also be considered part of student academic achievement in these courses. Cross (1975) reports that up to one fourth of the community colleges she surveyed offer encounter group experiences to students, all of which presumably aim at affective types of outcomes. The development of interpersonal sensitivity and competence can be considered academic achievement for those courses in addition to knowledge about interpersonal relations.

Table 1 shows a taxonomy of such student characteristics that potentially can be changed by college instruction of various kinds. It is adapted from a "structure for the outcomes of postsecondary education" developed at the National Center for Higher

Table 1. A Taxonomy of Student Characteristics that Potentially Can Be Changed by College Instruction

Aspirations
- Desires, Aims, and Goals
- Dislikes, Likes, and Interests
- Motivation or Drive Level
- Other Aspirational Outcomes

Competence and Skills
- Academic Skills
- Citizenship and Family Membership Skills
- Creativity Skills
- Expression and Communication Skills
- Intellectual Skills
- Interpersonal, Leadership, and Organizational Skills
- Occupational Skills
- Physical and Motor Skills
- Other Skill Outcomes

Morale, Satisfaction, and Affective Characteristics
- Attitudes and Values
- Beliefs, Commitments, and Philosophy of Life
- Feelings and Emotions
- Mores, Customs, and Standards of Conduct
- Other Affective Outcomes

Table 1 *(Continued)*

- Perceptual Characteristics
  - Perceptual Awareness and Sensitivity
  - Perception of Self
  - Perception of Others
  - Perception of Things
  - Other Perceptual Outcomes
- Physical and Psychological Characteristics
  - Physical Fitness and Traits
  - Physiological Health
  - Other Physical or Physiological Outcomes
- Personality Characteristics
  - Adventurousness and Initiative
  - Autonomy and Independence
  - Dependability and Responsibility
  - Dogmatism and Authoritarianism
  - Flexibility and Adaptability
  - Habits
  - Psychological Functioning
  - Tolerance and Persistence
  - Other Personality Characteristics
- Status, Recognition and Certification
  - Credit Recognition
  - Image, Reputation, or Status
- Social Roles
  - Affiliations
  - Avocational and Social Roles
  - Career and Vocational Roles
  - Citizenship Roles
  - Family Roles
  - Friendships and Relationships
  - Other Roles
- General Knowledge and Understanding
  - Knowledge and Understanding of General Facts and Terminology
  - Knowledge and Understanding of General Processes
  - Knowledge and Understanding of General Theory
  - Other General Knowledge and Understanding
- Specialized Knowledge and Understanding
  - Knowledge and Understanding of Specialized Facts and Terminology
  - Knowledge and Understanding of Specialized Processes
  - Knowledge and Understanding of Specialized Theory
  - Other Specialized Knowledge and Understanding

Source: Lenning and others (1976, pp. 16-17).

Education Management Systems (Lenning, Lee, Micek, and Service, 1976). The Center is compiling and developing additional measures for certain categories of these educational outcomes, and it is evident that great diversity exists in the manner that these forms of development can be assessed. There are common principles that apply, however, no matter what is being assessed. For example, the term *achievement* implies change in status that is positive in nature;

but what may be positive progress in achievement to one person may have a negative connotation to others. Thus, a number of academic achievements that are seen as positive by those who espouse the community college philosophy—such as skills useful on a job—may not be viewed as academic achievement by everyone, even though, as Ebel contends (1972), cognitive learning is central to all of them.

uses of achievement assessment by colleges

By *assessment*, we mean the measurement, analysis, appraisal, and evaluation of the attainment or increase of some desired and intended accomplishment for individuals or groups of students. Assessment of student progress in academic achievement can be used in a number of specific, practical ways by community colleges and their students (for examples, see Tyler, 1969; Miller and Prince, 1976; Payne, 1974; and Merwin and Higgins, 1968). Some of the eight major uses of this information (described in the following sections) are ignored or underemphasized in community colleges (and perhaps even more in four-year colleges) that use assessment data only for placement and grading.

One: Planning Learning Experiences. For effective planning of future learning experiences, it is essential to understand the level of development of groups of students, and of individual students within the groups that are considered to be important by institutional personnel and students. (Chickering, 1969, calls these *developmental vectors.*) Also important for this purpose is knowledge about the development or change that has taken place in those students during the learning experiences. Such knowledge can assist institutional and program staff in planning future learning experiences, not only for these particular students, but also for students entering the program in the future. Included in such planning is consideration of changes in the curriculum and within specific courses (instructional goals, content, philosophy, and so forth), learning materials, instructional aids, and instructional methods and techniques. Too often, such assessment has not been considered in this kind of planning.

Assessments of academic achievement of various kinds are *not* the only assessments that are important in planning learning experiences for students. Equally important are assessments of learner characteristics and their interaction with learning (see the discussion by Schalock, 1976), assessments of the learning styles of

the students and their effects on learning (see Cross' [1976] chapter on cognitive styles), and assessments of the impact of the environment and environmental change on learning (for example, see Baird, 1974, 1976a).

Two: Student Counseling and Advising. By providing feedback to students about their achievement, teachers, counselors, and advisors can help students examine the realism of their aspirations or plans, identify areas of their development that need particular attention, and determine the need for particular emphases and courses of action. Students can also be led to self-understanding by this feedback, which in turn leads to a level of self-reliance and self-direction that allows them to consider the next steps in their development and to plan realistically for the future. As indicated by Miller and Prince (1976, p. 52), "growing is a cumulative business. Knowledge of an individual's, group's, or organization's present status is a prerequisite to planned change."

Three: Diagnosing Student Problems. Although achievement tests are usually not associated in some people's minds with diagnosis, diagnostic tests are in fact an important type of achievement test. Diagnostic tests are designed to sample specific areas of skill or other criteria with enough items to allow the report of reliable subscores pertaining to proficiency in a given area. In many cases, individual item statistics add to the analysis. A diagnosis of learning difficulties for particular students or the group as a whole can indicate whether corrective or remedial procedures are necessary, and may suggest the remediation activities that are most appropriate. Diagnosis and diagnostic instruments can identify students' strong and weak areas and can thereby help students improve in their areas of weakness and build on their areas of strength. Such diagnosis is especially important for the success of remedial programs.

Four: Appraising Student Readiness. Most educators consider student development of all kinds to be cumulative and sequential. Therefore, an instructor generally will not want to go to a later step in the developmental process on which he or she is focusing until at least most persons in the class have mastered the prerequisite step. The instructor cannot know whether the students are ready to move on until some type of mastery assessment has been conducted. (Note that the concern here is not to rank students according to their levels of achievement, a characteristic considered important in the design of most published test instruments—which are norm-referenced instruments.) A less than desirable achievement level, from the instructor's point of view, may suggest that review,

repetition, or some sort of remediation is necessary. Another potential implication of assessment aimed at determining readiness pertains to curriculum development. For example, assessment of students' achievement in a freshman course or program may suggest that the content be modified to make it appropriate for the freshman year, or the course may be pushed back to a later year in the curricular sequence.

Five: Student Classification and Categorization. Attempts have been made in many community colleges to separate entering students into those who need general remedial work, those who should enter the regular sequence of the program, and those who will be allowed to bypass certain first-level courses in the sequence if they desire to do so. Academic achievement data are often used as evidence for making such decisions—for example, high school grades, successful completion of particular high school courses, and American College Testing Program Assessment or Comparative Guidance and Placement scores are all academic achievement data that are used by many community colleges for initial course placement of students.

Six: Grading, Promotion, and Merit Awards. Probably the most universally acknowledged reason for assessing students' progress in academic achievement is for the purpose of assigning grades. Grades have, over the years, been used to determine student qualifications for graduation with scholastic honors, admission to Phi Theta Kappa (the two-year college scholastic honorary society), and admission to a particular four-year college or program after graduation from the community college. Yet, the grades obtained by a student may tell us little or nothing about the kind and amount of real, underlying academic achievements experienced by the student, for a number of reasons (Lenning, 1974b). Similarly, Hoyt (1965) reviewed the relevant literature and found little or no relationship between college grades and postgraduate achievement. Hoyt therefore proposed that the grade transcript be replaced by a profile of accomplishment indicators. Others have also proposed moves in such a direction,* and a similar concept called a *narrative transcript*

*Hunt (1972), for example, proposed that there be two separate transcripts. One would be a public transcript that would separately list all required core courses, major courses, and electives, and then would give the student's overall absolute and relative standing for each of the three *types* of courses. A private, confidential transcript listing five different "grades" for each course would also be developed for use by the student, advisors, and teachers: (1) student's self-rating of progress; (2) instructor's rating of the student's progress; (3) rank of the student in the class; (4) comparison of the student with achieve-

has been used at several dozen colleges across the country, including at least one community college—the Community College of Vermont. The grade transcript continues to be well entrenched and seems destined to remain so, but if competency profiles or demonstration portfolios (the standard means of exhibiting level of art school achievement to prospective employers) do become prominent, systematic assessment of academic achievement will become even more important.

Seven: Evaluating Efficiency and Effectiveness. As discussed in an earlier report (Lenning, 1974b), the increasing calls for postsecondary education to be accountable for the educational benefits they provide for students, and the general inability of most college officials to provide effective documentation in response to these calls, had resulted during the early 1970s in what seemed to this writer to be a "benefits crisis." Evaluation of the effectiveness of colleges and their programs, and relating that effectiveness to program costs, is the acknowledged way to gather the evidence being demanded to show that colleges are doing worthwhile jobs. Palola and Lehmann (1976) have reported on such an effectiveness/costs system that is operating at Empire State College in New York, a four-year university without walls. Overall assessment of the academic achievements of students as a group is an important part of any such evaluation. Included should be evaluations of the effect of student academic achievement on: the curriculum; the courses within the curriculum; the instructional methods, techniques, and materials being used; the organizational arrangements; and so forth.

Eight: Evaluating Innovations. Most community colleges and other postsecondary institutions periodically try new methods, techniques, materials, modifications in the environment, or other changes in attempts to increase student learning. In order to determine whether the modification is having its desired effect, either of two procedures are appropriate: (1) information about student learning taking place under the new situation must be compared to the learning that occurred before the change took place, or (2) the learning of an experimental student group being subjected to the change must be compared to the learning of an equivalent group of students among whom other conditions are similar but for whom the experimental change was not made. One reason so many innovative and experimental educational programs have failed over the

ment of a normative group; and (5) whether the student withdraws, receives credit for the course, and so forth.

years is that a systematic, ongoing evaluation program, including the assessment of student achievement, was not part of the program. Another reason is that the evaluation used has often focused only on the overall success or failure of the program (summative evaluation), rather than on improvements in the program that might make it more effective as the program proceeded (formative evaluation).

Conclusion. Because of the importance of these eight uses of assessment information, it is crucial that community colleges have a well-developed and effective office to which faculty and others at all levels can go for help in planning and developing assessment programs and instruments and in interpreting and applying data. Unless the purposes for gathering assessment information are thoroughly considered when developing assessment procedures and instruments, and unless effective assessment procedures and instruments are used for these purposes, the assessment may have little impact and may be largely a waste of time (see Airasian and Madaus, 1972).

uses of achievement information by students

Although counselors and other student personnel people have traditionally used assessment information to help them better understand and assist the students with whom they are working, over the past decade there has been a strong move to help students use such data themselves without the assistance of another person (the counselor). As indicated by Miller and Prince, in a book that outlines a theory of student development for use by student personnel workers (1976), the goal of assessment for student development "is to help students understand their current patterns of behavior, emphasizing positively the specific skills they have instead of the ones they lack. From this base, all students can move toward increased self-direction. . . . Assessment programs must be designed *with* students rather than for or about them; therefore, only information that can directly increase students' self-understanding or improve their self-direction need be collected. The primary focus of many student assessment efforts has been to help student affairs workers better understand their "clients." Although this objective is desirable, it has tended to create volumes of information *about* students that is rarely used directly by them" (pp. 48-49).

Faculty members have also used assessments of student achievement to promote student understanding and development.

For example, some faculty use such assessment as an incentive for students to study. Most readers of this article can probably remember one or more college instructors who periodically gave unannounced "pop" quizzes in order to encourage students to keep up on their reading assignments. Similarly, midterm and final examinations have motivated students to review and reinforce prior learning.

Some faculty also see examinations as a teaching device. Thus, they go over the exam with the students as soon as possible after an exam is administered. They may also design the content and format of their exam in a way that allows it to be even more useful as a learning device. For example, when I was a secondary school teacher, many years ago, in every exam I included a section of five-part multiple-choice items—four of the five responses were correct and the student was to choose the incorrect one. (Similarly, I sometimes gave short oral quizzes for which there was immediate feedback to the students.) Matching exercises and specifically worded essay questions that give some examples to start students thinking are additional paper-and-pencil approaches that can facilitate student learning. Many other types of assessment procedures that are not paper and pencil in nature, described later in this paper, are especially appropriate for facilitating learning.

methods of assessment or measurement

One cannot have assessment without measurement of some kind, assuming that one agrees with Payne's (1974) list of seven stages of educational assessment: specifying detailed goals and objectives, designing the assessment system, selecting data-gathering methods, collecting relevant data, analyzing and summarizing data, contrasting data and objectives, and feeding back results. Measurement seems to this author to be most crucial for the success of this process. Here is where the most serious problems need to be overcome. Furthermore, if measurement is unsuccessful, none of the later steps in the assessment process even have a chance to work.

When assessment of achievement is mentioned, many people think only of paper-and-pencil achievement tests. Such tests are important, but they need to be supplemented by additional measures of the same achievement variables, as demonstrated by the Empire State College student assessment system (Palola and Lehmann, 1976). Community colleges face some additional situations that make the inclusion of additional measures even more important, as

will be discussed in the final section of this article. Furthermore, there are some outcomes desired by particular program planners for which there are no good paper-and-pencil measures.

Paper-and-Pencil Tests. Many excellent books are available on measurement theory and test construction, and they have enough different styles, formats, and coverage that the needs of most people can be met, whether they be completely new to this area and have no statistics background or whether they be relatively experienced. Among them are:

Adkins, D. C. *Test Construction.* 2nd ed. Columbus, Ohio: Merrill, 1974.
Anastasi, A. *Psychological Testing.* 3rd ed. New York: Macmillan, 1968.
Cronbach, L. J. *Essentials of Psychological Testing.* New York: Harper & Row, 1970.
Educational Testing Service. *Educational Tests and Measurement Kit.* Princeton, N.J.: Educational Testing Service, 1973.
Gronlund, N. E. *Measurement and Evaluation in Teaching.* 3rd ed. New York: Macmillan, 1976.
Payne, D. A. *The Assessment of Learning: Cognitive and Affective.* Lexington, Mass.: Heath, 1974.
Thorndike, R. L., and Hagen, E. *Measurement and Evaluation in Psychology and Education.* 3rd ed. New York: Wiley, 1969.

Either locally developed tests or published standardized tests can be used to assess the particular learning outcomes of a program or course. The published tests often have norms that allow useful comparisons with the developmental level of one's students. Most tests have been developed through extensive and controlled quality processes and have been thoroughly tested out on different types of students in various institutional contexts. If they do not assess the specific outcomes at which the program or course is aiming, however, or if their terminology is inappropriate for one's students and in other ways are inappropriate for one's situation, locally developed tests tailored to the assessment needs of the specific program or course should be created. Too often, institutional staff are not sufficiently critical when considering the use of a particular published instrument or of one developed by and being used in another college. Conversely, too often insufficient time, effort, *and pretesting* are devoted to the development of locally developed instruments.

In exploring the available published tests and in considering whether or not to use particular published test instruments, the reviews by testing specialists that are presented in Buros' *Seventh Mental Measurements Yearbook* (1972) can be invaluable. A some-

what outdated, but useful, annotated list of standardized tests appropriate for "junior colleges" was developed by Seibel (1967). A more recent sourcebook describing tests and inventories for use with college and university students is available from the Council on Postsecondary Accreditation (1975). To be able to judge the utility of these tests, one must go to Buros or some other source of critiques. Some additional sources of information about paper-and-pencil instruments, including both published and unpublished versions, are: on assessment of attitudes (Oppenheim, 1966; Shaw and Wright, 1967; Robinson and Shaver, 1969; Robinson, Rusk, and Head, 1968), assessment of social functioning (Lake, Miles, and Earle, 1973), assessment of occupational attitudes and occupational characteristics (Robinson, Atnanasiou, and Head, 1969), assessment of occupational education achievement (Boyd and Shimberg, 1971), assessment of psychological characteristics (Maloney and Ward, 1976), and assessment of self-concept (Wylie, 1961). Several cautions are in order for any institutional personnel that might examine the information in these sources: One should (1) make certain that the instrument has been validated for practical use on campus, not just for research purposes; (2) ascertain whether the instrument is only for group use or whether it is also valid for assessing individuals; and (3) before deciding to use a particular instrument, no matter how positive are the critiques of it, examine a copy of the instrument itself in relation to one's own needs.

Most of the "measurement and tests" books in the list provided earlier include extensive discussions of practical considerations, techniques, and suggestions for developing one's own tests. There are a number of commonly used item formats that are usually discussed in depth—multiple choice, essay, checklists, matching, true-false, short answer, completion, and so forth.* As Rowley (1974) demonstrated for multiple-choice tests, certain types of students may be favored by certain test formats. It should also be remembered that less prominent formats often not discussed in such texts (and some of them are not so new) may deserve consideration. For example, Anderson (1974) outlines effecti proce-

*True-false items have come into ill repute in many quarters. The reason, according to Ebel (1970) is not an inadequacy of this type of item, but rather inadequate care in developing true-false tests. Furthermore, he presents data showing that the average person can easily learn to write effective true-false items and that true-false tests are preferred for some types of purposes and content. He also outlines easily understood and utilized criteria for writing and evaluating such tests (1971, 1975).

dures—based on extensive previous research—for developing "cloze" measures on the local campus. (Cloze measures require the student to write in the correct words in blanks in the sentences in a paragraph.) It should not be forgotten that tests and measurement is not a static field, that new developments having practical implications for assessment on campus are taking place every year. In addition, new ideas about outcomes appear each year, along with measures, and some of them may have potential—for example, the construct of "analytical objectivity" proposed by Kagerer (1974). Therefore, it is desirable that one person on each campus be responsible for keeping up to date on such developments and share any that have potential implications for the campus—in a brief and understandable way—to the entire staff. Such a person could also be available for consultation with faculty members about developing assessment instruments most appropriate for their programs and classes, about trying out and evaluating these instruments, about interpreting and using results from these instruments, and about alternatives to paper-and-pencil tests. For example, local tests developed should also receive an item analysis, using methods that take little of the faculty member's time and are relatively effective. Furthermore, faculty need to be helped to use item analysis to help revise and improve items, in addition to selecting items. For example, Lange, Lehmann, and Mehrens (1967) found that it took about five times as long to develop a new psychology test item as to revise an old one, using item analysis, and the revised item was more strongly related to course achievement.

A recent trend in testing that is especially important for community colleges is the development of criterion-referenced tests. Unlike norm-referenced tests, which rank students—for example, "average performance" or "at the top of her class"—and attempt to discriminate among students, criterion-referenced tests relate performance to absolute standards or criteria based on actual task requirements or arbitrarily determined performance levels—for example, "he has demonstrated the skills to be a dental lab technician" or "she only answered 75 percent of the items correctly, while what is needed for competence mastery is 90 percent." Gronlund's treatise (1973) on developing such tests for classroom use should be "must" reading for both faculty members and administrators. Another useful treatment is provided by Popham (1971), and Knapp (1974) provides useful information about twenty-one criterion-referenced tests in the collection of the Educational Testing Service.

Other Data-Gathering Methods. Paper-and-pencil tests cannot adequately assess achievement on many of the occupational skills taught in community colleges, even though they may be able to assess the students' knowledge and understanding of the skills and their application. Demonstration and direct observation are needed to assess effectively such learning outcomes as well as other types of evidence. Furthermore, these other methods can serve as a valuable supplement to paper-and-pencil tests even for such learning outcomes as knowledge, understanding, and analytical thinking—for example, see Levine and McGuire (1970).

Knapp and Sharon (1975) provide an overview of a number of assessment methods. First they discuss two types of performance tests, work samples and unobtrusive measures. Unobtrusive measures can include such things as an increase in attendance at campus plays corresponding to the introduction of a course on appreciation of the arts (for other ideas in this area, see Webb, Campbell, Schwartz, and Sechrest [1966]). Observation of simulations is another way to assess learning, and the authors cover a number of types: leaderless group discussions, management games, interview simulations, role playing, stress interviews, written diagnostic and trouble-shooting exercises, case studies, individual fact finding and decision making, and in-basket tests. Oral interviews of various types can also be useful; Knapp and Sharon refer to structured interviews, unstructured interviews, panel interviews, oral tests, oral reports on presentations, and oral trade tests. Additional types of assessment discussed are written or oral self-ratings and reports (self-observation), ratings of judges or other observers, and product assessments.

Concerning self-report, in the Empire State College student assessment program mentioned earlier (Palola and Lehmann, 1976) all instructor assessments are effectively supplemented by student self-assessments of accomplishment, and community colleges could easily incorporate such supplemental data. That students do tend to report self-assessments honestly has been well documented in two extensive reviews of related studies by the American College Testing Program (1973, pp. 304-319) and Baird (1976b). (These documents also show the importance of as much as possible removing various biases—for example, sex and racial/ethnic bias—from one's assessment instruments and the application of assessment results.) Two especially relevant studies (Berdie, 1971; McMorris and Ambrosino, 1973) found similar support for the validity of self-report, this time through comparison of college students' self-report of knowledge and understanding possessed and results of achievement tests.

Additional potentially useful assessment methods and variations can be added to those reported by Knapp and Sharon. Boyd and DeVault's review (1966) differentiated several different basic approaches to the observation and recording of behavior (and some considerations for each): participant versus nonparticipant, structured versus nonstructured, and descriptive versus evaluative. Edling's (1968) review found that various media could be effectively used to "present more complex and lifelike stimuli in test situations (p. 188)," including: motion pictures, television, photos, kinescope, and videotape. The computer is another such media format, either through direct testing like that utilized in computer-assisted instruction (CAI), where the student is provided immediate feedback concerning the correctness of his or her response, or through computer analysis like that discussed by Slotnick (1972) for grading essays. Programmed texts and teaching machines are forms of assessment analogous to CAI. On-the-job assessment by supervisors in work-study programs is another means of assessment that should not be overlooked.

problems in assessing academic achievement

Several serious problems have already been mentioned concerning the assessment of student academic achievement on a campus. One concerned the fact that people cannot even agree on what some commonly desired learning outcome constructs mean, let alone measure them. Other desired outcomes are simply difficult to measure, especially with a high degree of accuracy. And third is the problem of keeping administrators and faculty informed about developments in the field that have potential practical implications for their programs and courses. Two additional problems are especially important at community colleges: the measurement of change and the diversity of students and programs at community colleges.

*Problems in Measuring Change.** Most formal assessments of academic achievement taking place at postsecondary institutions, including community colleges, only examine students' levels of accomplishment at the end of a course or program ("output") without any regard for the knowledge or skill possessed by the students

*This discussion is based on an earlier indepth analysis conducted by the author—"Problems in Documenting College Benefits" (unpublished paper, 1973), available from Oscar T. Lenning, Senior Staff Associate, National Center for Higher Education Systems, P.O. Drawer P, Boulder, CO 80302.

at the beginning (input). It is important to consider both. For example, a student who has pretty much mastered the learning prior to entering a course may earn an *A* even though he or she has increased his or her level little, if at all, during the course. Conversely, someone starting at a very low level of learning may experience major gains and yet only get a *C*, even though he or she has experienced much more learning than the student getting an *A*. Therefore, some people would like to focus on *increases* in learning rather than output level of learning in their assessment procedures for individual students. When assessing the effectiveness of a program or the impact of a new innovation, change in learning level becomes an essential focus, as indicated by Hartnett (1971, p. 14): "Almost all proponents of educational accountability tend to favor a 'value-added' concept. That is, institutions should be judged not by their outputs alone, but by their outputs relative to their inputs. The students' final standing with regard to various characteristics would not be as important as their changes (usually gains) during the college years." And, as stated by Cooley (1974, p. 33), "One of the best established, yet frequently ignored principles in the assessment of educational effects is that the state of students' abilities and motives as they enter an educational program is always the strongest predictor of what they will achieve in that program. The most obvious way to deal with this problem is to measure the dimensions of individual differences that are expected to be affected by the program being assessed prior to initiation of that program. . . . To ignore measurement of the initial status of the learner results in the same kind of ambiguity as ignoring the measurement of process or the measurement of outcomes."

One complication is that equal changes on a score scale, from pretest to posttest, mean different things because of factors such as "regression effect," "ceiling effect," and "floor effect." Therefore, a student at a higher initial level of competence in the area of concern at the beginning of the course or program may exhibit less observed change on a posttest than a student lower in initial status, and yet have more "real change" or achievement. Various methods have been developed for adjusting change scores, but many experts now agree that the focus should not be on change scores or average change across groups. Instead, one should equate on initial level and then compare output levels. In comparing groups concerning the effects of innovation, one can match the groups on initial status through selection, select randomly, or use stratified, random selection. Another way is to separate the group or groups into those that

are high, medium, and low on input level, and look at the output of each subgroup separately across groups. Furthermore, there are a number of statistical techniques for equating on initial level, although there can be problems with using these methods if certain conditions are not met.

Concerning program evaluation and evaluation of effectiveness, several additional problems are often present. Many such studies in the past have neglected to consider the students who dropped out of the course or program before completion. If those completing a course or program exhibit significant achievement, but half of the students have dropped out along the way, the overall achievement level may not be as good as supposed. Furthermore, positive achievement may occur during the period, whether these students receive the instruction or not, because of factors such as normal increases in maturity and knowledge with age, experiences gained outside of the program, or societal trends. Another problem with many value-added studies is that they only analyze averages. There may be an indication of overall group achievement for an experimental group, and yet it may be accounted for by a minority of individuals within the group, whereas the achievement may have been slight for the majority of individuals. Similarly, no change may actually mean no change, but it may also mean that segments of the group changed in opposite directions, in effect canceling each other out for the group as a whole. It is important to examine patterns of achievement within a group in addition to overall averages.

The problems outlined can be overcome by careful planning, and it is important to use multiple measures for the same outcome—for example, using self-report data to supplement the test data. Similarly, if "value added" is of concern, it is important that the tests and test items one chooses to use not be so stable in nature that they tend to restrict change from pretest to posttest, as do many standardized, norm-referenced tests designed for selection to a program and for placement purposes. Finally, for those interested in assessing the achievement impacts of instructional innovations, the following two recent publications may be helpful:

U.S. Office of Education. *A Practical Guide to Measuring Project Impact on Student Achievement.* Monographs on Evaluation in Education Series, No. 1. Washington, D.C.: U.S. Government Printing Office, 1975. Price $1.90.

U.S. Office of Education. *A Procedural Guide for Validating Achievement Gains in Educational Projects.* Monographs on Evaluation in Education Series, No. 2. Washington, D.C.: U.S. Government Printing Office, 1976. Price $2.10.

Special Problems for Community Colleges. Certain characteristics that make community colleges different from other types of institutions also provide them with unique assessment problems. One of those problems relates to the diversity of a typical community college's students and their needs (for example, see Cross, 1968; Brue, Engen, and Maxey, 1971; Garbin and Vaughn, 1971; and Lenning and Hanson, 1977). Thus, adjusting campus achievement assessment efforts to "the individual character of students" is an especially difficult and complex problem for community colleges. Furthermore, the Commission on Non-Traditional Study (1973) reported that millions of adults would like to participate in postsecondary education but have been hesitant about approaching such institutions, and, based on Cross' data (1971), we might expect that these are largely different types of adults than those now attending.

Not only are the students especially diverse at most community colleges, but so are the programs and courses, and the learning experiences therein. Community colleges not only have diverse arts and sciences courses, but also occupational courses of all types and levels. Furthermore, community colleges have traditionally emphasized continuing education opportunities for the community, and generally offer a bewildering array of programs and courses in this area, each having its unique achievement assessment considerations. Even students in a flower-arranging course want some idea of their achievement and the areas in which they need special help.

Community colleges do have special assessment problems in addition to those faced by other institutions. This author is convinced that these problems can largely be overcome, however, if everyone on campus: (1) becomes more knowledgable about effective assessment and applies this knowledge to their specific areas of responsibility; (2) becomes aware of the various pitfalls in assessment and ways of avoiding them; and (3) develops a common commitment to improve assessment of various kinds on campus. Everyone should also keep in mind that different philosophies of student development lead to different emphases and techniques in assessment (Cross, 1975), and that assessment (and its problems) also varies with the particular learning outcome that one wishes to assess (for example, see Tryk [1968]).

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A model of student learning consisting of five important elements can be applied to decisions in admissions, selection, placement, further education, and changes in programs.

evaluating student readiness for further education

clifford e. lunneborg

The usual image conjured up by the phrase "readiness for further education" is a stark one, rooted in such assessment traditions as determining the reading readiness of a first-grade pupil, deciding to hold a student back in the fourth grade, and judging that a given applicant is not "ready" to enter the hallowed precincts of a select college. In each instance, the decision was a go/no-go one, further education versus no further education, and it was made for the student by the institution.

Such practices seem badly aligned with the operating philosophy of the public, open-door community college, where the phrase "we take students as they come" is usually interpreted to mean that all applicants should not only be admitted but encouraged to realize their educational aspirations. In short, the community college philosophy is that *everyone* is ready for some kind of further education. How can there be a role, then, for assessing student readiness? Paradoxically, such assessments have an even more important role to play in the community college than elsewhere in education, precisely because the college cannot get away with the simple, uni-

lateral, one-dimensional judgment that a potential student is or is not ready for further education. This writer's principal mentor was fond of highlighting the differences between certain personnel selection and classification procedures used in education and industry by dividing them into those in which some of the applicants could be "drowned" and those in which that was not a permissible outcome. In principle, none of our community college applicants may be drowned; each must be accommodated in some classroom. Readiness assessments are needed, as a result, not to decide *for* the student "readiness or not" but to decide *with* the student "readiness for what."

However, even this expanded role for educational readiness assessment tells only half the story. While this chapter will focus on ways in which assessment can be used to facilitate student educational decision making in choosing a college, selecting a program of study, and developing educational plans following the college experience, there is a flip side. Assessment of student readiness can and should be used in institutional decision making as well. For whom is the *college* educationally ready? Recruitment strategies, course and curriculum development, staffing changes, and articulation efforts all demand some inventory of student characteristics. Obtaining and evaluating student assessments for such institutional purposes must also be considered.

a framework

Rather than launching into a catalog of assessment devices and techniques it will be helpful to first establish a general framework within which they may be fit, interrelated, and understood. That framework will derive from two straightforward notions. The first is that the fundamental goal of the community college is education or, from the student's point of view, facilitating learning. The second, already introduced, is that students and institutions must make educational decisions. Thus a desirable goal in assessing readiness for education is to encourage decisions that maximize the amount of learning that takes place. This first notion will be discussed at some length; the second, more briefly.

One: What Controls the Amount of Learning? Although a number of alternative formulations are available, the framework to be developed here is based on Carroll's (1963) model of school learning. Carroll's central thesis is that the student *succeeds* in learning a task to the extent that the amount of *time* required by that

student to learn the task is spent in learning. The power of this conceptualization is that it compels us to attend closely to three aspects of learning: (1) What is the task to be learned? (2) What determines the amount of time needed by the student to learn the task? (3) What determines the amount of time the student is willing to spend?

First, what is the task to be learned? The task to be learned may be relatively narrow, such as learning the symbol for a diode in electrical diagrams, or broad, such as meeting general education requirements, but it must be described precisely enough that teacher and learner are not only in agreement as to what is to be learned but as to the means by which teacher and/or learner can judge that the task has been mastered. Without that degree of specification, neither student, teacher, nor administrator can determine whether learning (instruction) is effective.

Second, what determines the amount of time needed by the student to learn the task? Carroll sees the second aspect, the time needed by the student to master the learning task, as determined by three factors, renamed in some instances by the present author.

- *Optimal time.* What is the shortest amount of time the student could actively devote to mastering the task? Originally termed *aptitude*, this is the time required for the student to master the task, assuming that ample time is available (opportunity), that the student is willing to spend the time (perseverance), and that the student is provided with instruction that is best (optimal) for that student. This optimal time varies from student to student for the same task, reflecting differences in students' experiences, including differences in the particular knowledge they may have. For example, the nontypist will require more time to learn keypunching than will the typist. There is an optimal time for all students for each task. Note, however, that the time may be spent in very different activities; one student may spend it in reading and another may spend it with a tutor.
- *Instructional handicap.* It may take more of a student's time than this optimal amount if the instruction provided is not optimal for that individual. Nonoptimal instruction handicaps the student by requiring the student to spend more time to learn the task. Some students will be handicapped very little, learning with about the same effort (time spent), regardless of instruction. Other students will be affected drastically. The undeveloped reader, for example, will have to spend far more time in a reading-oriented course than in a course in which information is conveyed by teacher-student dialog.

- *Quality of instruction.* Quality of instruction involves differences in instructional *approaches* to mastering a certain task, rather than the differences in required learning time that may be induced in some or all students.

The time a student needs to spend learning a task, then, is the sum of that student's optimal time and the instructional handicap, if any, associated with the particular instruction selected by the student. Learning will be incomplete, according to Carroll, if the student actually spends less than this necessary amount of time.

Third, what determines the amount of time the student is willing to spend? The amount of time devoted to learning is seen as potentially limited by two additional factors.

- *Opportunity.* The time allowed for learning may be constrained by such things as the college calendar, a teacher's workload, and availability of learning materials. Institutional organization and operation may influence the amount of time the student can spend learning.
- *Perseverance.* The student, finally, is willing to spend only a certain amount of time mastering the learning task. How important to the student is this learning relative to what may be achieved by devoting time to other activities? Perseverance, clearly, may be influenced by the quality of instruction as well as by the choice of learning task. Boredom, frustration, and loss of confidence occasioned by time spent learning may, in turn, reduce the amount of time the student is willing to spend learning.

The student will stop attempting to master the learning task, depending on which of the following occurs first: The task is mastered, the institution allows the student no further time, or the student decides not to persevere. That is, the amount of time actually spent will be the minimum of (1) the time needed to master the task (optimal time plus the handicap), (2) opportunity, and (3) perseverance. If the amount of time spent in learning is less than that required for mastery, learning is not complete. How could the learning (instructional) situation be altered to make learning more complete? Clearly, this should involve decreasing the time needed and/or increasing the time spent. Decreasing the time needed can take one of two forms: decreasing the optimal time to mastery (as by pretraining or remediation) or decreasing the handicap (as by selecting more optimal instruction). Increasing the time spent can be accomplished by increasing opportunity (adjusting instruction so the student *can* spend more time learning), or by increasing perseverance (intervention designed so the student *will* spend more time learning).

We will use this framework for evaluating student readiness for further education, that is, for assessing the student's optimal time and perseverance for a certain learning task relative to the opportunity the student has to master that task and the handicap that might be associated with alternative approaches to teaching that task. An important goal of assessment, then, is to identify limiting factors and to advise the student on selecting learning tasks or programs of instruction so as to make attainment of the selected task more likely.

Two: Decision Making. Decision making was the second element we wanted to include in our framework. Student assessments are frequently employed on behalf of students to make decisions between alternative courses of educational action. Here the formal procedures of utility or decision theory can be used to improve the use of assessments, as suggested by Cronbach and Gleser (1957). Basically, their approach directs us to fully assess the costs and benefits of alternative decisions, selecting the one that is expected to have the greatest utility to the decision maker. Because of the potential technical complexities in fully implementing this insight, it has not received the practical attention it deserves. The approach has also met resistance for requiring that we place on a single scale of utility our valuation of diverse educational outcomes. What is the value of eight students completing Adult Basic Education, for example, as against two certified cosmetologists or four able-bodied seamen? Difficult as the task is, decision theory teaches us that the alternative to making values explicit is the acceptance of implicit, perhaps unintended, values.

The technical details of Cronbach's decision-theoretic analysis of personnel testing are well developed by Cronbach and Gleser (1957) and the implications for certain kinds of educational decisions—selection, placement, assignment—have been discussed by Hills (1971) and Willingham (1974). Here we shall only pay attention to Cronbach's idea that the utility of an educational decision, such as whether Student A should go into Training Sequence X rather than Y, Z, or W, may be considered both from the point of view of the individual and of the institution. For what decisions are institutional utilities paramount? When is the student totally responsible for the decision and its consequences? We shall also try to simplify the development of "utilities" by focusing on the value of mastering learning tasks to the individual student and to the institution. The prime function of colleges, after all, is to teach, and of students, to learn. It is within this teaching/learning arena that we want to understand how assessment can be used to advantage in

decision making. By focusing on this common goal, decisions that will result in the optimal institutional and individual outcomes may be made to coincide. The college maximizes its productivity by maximizing the educational benefits accruing to its students.

some educational decisions

What are the educational decisions that should be affected by the assessment of student characteristics? All, of course, but let us take them up in a traditional, if not logical, order.

Admissions. Regardless of how open an institution is, admissions decisions *are* made. Perhaps different terms should be used. The college makes recruitment decisions ("Whom do we want to attract?"), while the student makes college-going decisions. "Shall I enroll in a college? Shall I attend your college?" The Commission on Tests of the College Entrance Examination Board (CEEB), in formulating recommendations on the future of testing in higher education (CEEB, 1970), emphasized the desirability of a symmetry of information in admissions decision making. That is, potential students need to have as much information about colleges as colleges have about them. This is even more true of the community college applicant, who *is* the decision maker, than of the student who is attempting entry to a selective college and, hence, who is awaiting an institutional decision. A student's decisions ought to include some appreciation of "What are the prospects for a student like me?" Systematic collection of such data, outlined as follows, would help the student select a college and the college direct its recruitment efforts.

Selection of Study Program. Admission to the institution often does not ensure admission to a particular program. Even where quotas or prerequisites do not restrict choice, the student's likelihood of satisfactorily completing the program is likely to vary from program to program. The college owes it to students and the community (1) to identify those student and program characteristics associated with differential success; (2) to counsel students on the importance of these differences to educational decision making; and (3) to implement changes in curriculum that will decrease the instructional handicap under which identifiable classes of students operate.

Placement. Testing acquired skills or knowledge may be used to assign students to or exempt students from certain elements in a curriculum. The community colleges, of course, are confronted

with an extremely wide variety of educational backgrounds. It has been reported, for example, that within a typical college's transfer program, enrollment reading level may range from Grade Four to Grade Fourteen. The diagnosis of important gaps and strengths in educational background, coupled with the provision of training to compensate for and take advantage of that background, may be the most exciting challenge in educational assessment. Central to work in this area is the notion that the same learning task may best be mastered by different students in different ways. The reader could profit by examining the model of interaction between student and instructional characteristics developed by Salomon (1972), the review work of Hills (1971), and Willingham's (1974) discussion of techniques.

Continuing Education. As Kintzer (1973) and others have pointed out, the community college is in a unique middle position in education. Those exiting from the college are not presumed to be finished with higher education. This is obvious, of course, in the case of the transfer student whose purpose at the community college is to prepare for entry into a four-year school. For the associate of applied arts as well, further education, albeit delayed, should be anticipated. There is growing interest in "reverse pyramid" curricula, which permit students to complete the liberal arts or general education parts of the B.A. program *after* they have completed the more specialized technical or professional training requirements. There are also now "upper-division" colleges, catering to the two-year college graduate, where the vocational-technical graduate may pursue additional formal learning in ever greater numbers. Similarly, one of the benefits accruing to the successful candidate for high school credit through the General Educational Development Test is entry to further educational programs. Finally, all who stop short of attainment of a traditional community college credential do so with some degree of preparedness for educational reentry.

A well-established goal of education at all levels is to increase the value students place on their own further learning. As this is true, it is as great a service to exiting as to entering students to assess readiness for further education and offer counseling based on that assessment. Both the assessment and the associated counseling are likely to vary as a function of the community college program completed or attempted.

Program Modification. Although the prime emphasis in the development and use of assessments of student educational readiness is on improving the quality of individual educational decisions,

such assessments play a complementary role in institutional decision making. We have already alluded to college recruitment decisions. Studies of student characteristics and their relation to attainment of educational goals ought to play as large a role in differential recruitment as they play in counseling students before and after they enroll.

Similarly, placement studies are undertaken not only to provide better instruction for individual students but also to provide the institution with the information necessary to decide between alternative modes of instruction or to decide to emphasize or deemphasize various aspects of courses. A step beyond this are studies of the relation of the characteristics of exiting students (data including their community college experiences) to subsequent educational/vocational performance, studies that provide colleges with vital signs for revamping and restructuring their programs.

assessments to be made

For present purposes, it seems inappropriate to describe specific assessment instruments. Rather, we shall discuss types of information useful to collect. This preference for generality is based on two reservations. First, specific tests may be related to specific outcomes, specific learning tasks. The interested reader can search, for example, the *Journal of Educational Psychology, Educational and Psychological Measurement, Measurement and Evaluation in Guidance,* or the *Journal of Educational Measurement,* for studies of applications. *Tests in Print* and *Mental Measurements Yearbook* (Buros, 1972, 1974) are traditional sources of information on standardized educational tests. The second reservation is an even more important one. Local characteristics should have a major influence on the development of any student assessment system. The description of learning goals, instructional resources, and student clientele, unique in some detail to the institution, will all interact to shape a testing program as it matures.

Student Characteristics at Entrance. It is convenient to divide student assessments into those which describe students when they enter and those which reflect what happens to students after entry. The latter are important not only as criteria—has learning been mastered?—but as measures of readiness for yet further education. What should we learn about students at entry?

1. *Prior Educational Record.* An obvious start to answering the student's question, "What learning tasks should I attempt?" is

the counterquestion, "What have you already learned?" Coursework already completed will give us a clue. Having had no mathematics beyond the ninth grade, for example, limits the learning tasks that can be undertaken immediately. Despite rhetoric about beginning community college with a clean slate, ignoring the earlier record does the student a disservice. Not only coursework taken, but also grades earned, have implications: When consistent with aptitude/achievement-test performance, low or high grades suggest that optimal time to master a learning task may be longer or shorter and, when inconsistent with test performance, should encourage us to explore with students factors affecting their perseverance in learning.

2. *Educational Proficiencies.* The transcript of earlier coursework may be too rough, out-of-date, or otherwise uncommunicative to give a reasonable picture of the student's educational background on which to base decision making in the college. Testing for specific educational proficiencies and academic skills will usually be necessary. According to Monroe (1972), at least 75 percent of community colleges do some diagnostic testing of skills in communication and computation. A number of standardized testing programs are available (for example, the Comparative Guidance and Placement Program of the College Entrance Examination Board [CEEB], the American College Testing [ACT] Assessment, and the Sequential Tests of Educational Progress and Cooperative Achievement Tests developed by the Educational Testing Service). Whatever tests are chosen, colleges are obligated to ensure that tests are selected and used consistent with the goals of the training alternatives available in their institutions. An instructional emphasis on the improvement of oral communications skills may not be well served by diagnostic testing oriented toward reading and writing. Although publishers will typically assist institutions in the conduct of studies designed to facilitate the introduction of their diagnostic instruments, it is not uncommon for faculties to protest that the match between the content of standard placement tests and their courses is not good enough. Where such protests are substantiated by clear course objectives, it should be possible to construct from those objectives a local instrument of greater usefulness. (See, for example, Chapter Five of Bloom, Hastings, and Madaus [1971], for a prescription for converting course objectives into placement testing assessments.)

3. *Achievements.* Placement testing of a nonremedial nature is also frequent in such areas as mathematics, foreign language, art, music, and technical drawing. The comments just made with respect

to the need to tailor assessments to programs of study apply equally well here.

Assessment of student achievement is also needed where the goal is not to place the student in one of a set of alternative courses, but to award the student credit for his or her achievements. The implications for further education are not as direct, although such credit may be interpreted subsequently as evidence of increased preparedness for further training. Where this interpretation is intended, colleges will want to ensure that the mechanism for awarding it supports that interpretation. For example, validation of such credit through performance on standardized college-level achievement tests such as those included in the College-Level Examinations Program (CLEP), the Undergraduate Program (UP) of the CEEB, or ACT's Proficiency Examination Program (PEP) supports students' claims that they are prepared for further education.

4. *Aptitudes.* Although the old distinction between aptitude and achievement assessments as tapping unlearned versus learned capacities is not supportable, a workable distinction can be made. Achievement testing can be largely focused on specific elements of the curriculum—have students mastered that which will permit them to succeed in English 102 or Math 105? Aptitude assessment, in contrast, will refer to cognitive capacities, habits, and styles not intentionally taught in the curriculum, but that may partly determine the student's optimal time or instructional handicap in mastering learning tasks.

Following Salomon's (1972) lead, for the purpose of making educational decisions, aptitudes may be subdivided into general and specific aptitudes. General aptitudes, such as verbal and quantitative ability, tend to have implications for the optimal time students need to master learning goals. In some cases, students may be required to complete remedial material before entering the normal instructional sequence; in other cases, students may be asked to complete more exercises to bring them to the same learning mastery as other students. The assessment of more specific aptitudes may identify specific instructional handicaps. For example, students with high inductive or high deductive reasoning abilities, respectively, have been found to learn more under a teaching method focusing on the use of one rather than the other ability.

5. *Personal Characteristics.* There are other personal characteristics, often styled *nonintellective* or *noncognitive,* that affect readiness for learning, largely by influencing the student's perseverance. As the amount of time the student is willing to spend in the

learning enterprise will frequently control whether learning tasks are mastered, it is as important to undertake assessment in this area as to assess aptitudes or achievements. Indeed, with only about one third of the very high community college student attrition explainable on "intellective" grounds (Monroe, 1972), perseverance would seem to need far greater attention from researchers and counselors.

What affects perseverance? Clearly, we do not have anything approaching a full answer yet, but the following is a sampling of measurable differences between students that affect perseverance: *student activities* (how students actually allot their time), *students' perception of learning demands* (what degree of commitment is perceived as necessary to achieve learning), the *importance students place on learning* (how important is learning to the student relative to other activities), *students' learning values* (what individual values are to be met through learning), *students' academic/vocational interests* (how focused are interests and how instrumental in decision making), *students' educational/vocational information* (how broad is the student's knowledge of options and implications), *students' self-confidence* (as reported by Cross in 1972, fewer than one third of community college students are confident of ability to handle coursework), and *students' awareness of their learning capabilities and weaknesses.*

A variety of instruments are available and the interested reader is again directed to Buros (1972, 1974) and to the educational counseling literature for specifics. We will discuss in the following section how assessment data of kinds just described can be used to facilitate improved decision making.

Assessing Educational Benefits. The workhorse team of indicators for the impact of educational programs on students are learning, persistence, and satisfaction. Although all three are obviously important, we shall concentrate on assessing learning. This is done for two reasons: (1) objective learning in the community college provides the clearest evidence of readiness for further education on the part of those exiting from college, and (2) achievement data, information about what has been learned, provides an institution with the most valuable signals about how programs of study need to be adjusted. Information about student satisfaction/dissatisfaction may help somewhat in this regard, but attrition rates provide us no diagnostic feedback: They alert us only to the prospect that "something" may be wrong.

Unfortunately, the student performance criteria most frequently used, a course grade, or worse, grades averaged over several

courses, provide little of diagnostic value for this second purpose, and they are surprisingly uninformative, particularly to those outside the college, when used for the first purpose. In both instances, achievement test performance is much to be preferred. For course development and improvement, for evaluating placement and assignment policies, and for guiding student progress through a course of study, achievement tests, frequently locally constructed but well aligned with course objectives, are irreplaceable. For our primary function here, that of evaluating readiness for continuing learning, performance on standardized, widely used achievement tests, such as those in the CLEP or the CEEB Undergraduate Program, provides the best available assessment procedure. Wide usage of these tests permits both the receiving college to make sensible evaluations of the pattern of the student's preparation and the sending college to counsel potential transfers about their prospects. Although this remark is oriented to the guidance, not the admissions, use of such assessments, the author recognizes that testing at time of transfer is not popular. Menacker (1975), for example, does not give much attention to the role such assessments might play in improving articulation, and Rinehart writing in this volume does not believe they should be required by four-year colleges without solid evidence for their necessity.

using and evaluating assessments

How is the information gained from student assessments to be used and how do we know if that use is effective? One point, above all, needs to be emphasized. One cannot simply buy a testing program and expect to have it operating effectively one, two, or three years later. Reading the applied testing literature and talking with colleagues at other institutions will certainly help one to decide what instruments or procedures are worth trying out. But experience elsewhere, no matter how extensive, can never substitute for local experience, carefully evaluated, in determining whether that program ought to be adopted. A corollary to this rule is that a college must be prepared to make a commitment of resources over a number of years if effective assessment is to be realized.

Assessment programs need to be evaluated by their efficiency in predicting students' later performance. Usually students are tested and then their scores on the tests are compared with their subsequent learning performance. Hills (1971) and Willingham (1974) provide excellent descriptions of ways to design studies to

establish and modify placement testing programs where the assessment of prior learning is important. Glaser and Nitko (1971) and Bloom, Hastings, and Madaus (1971) are valuable sources on the development of learning measures and of their use to develop and evaluate courses. Salomon (1972) outlines the use of specific aptitudes or other characteristics in designing alternative modes of instruction for the purpose of reducing the instructional handicap. The accelerated search for aptitude-treatment interactions (ATI) in education—selecting instructional techniques that are optimal for students possessing certain characteristics—will be facilitated by Salomon's delineation of three models: remedial, compensatory, and preferential. As these terms connote, alternative instruction may be devised to fill in (remedial) or bypass (compensatory) student characteristics or to differentially take advantage of them (preferential). Off to an unrewarding start, ATI studies can be expected to become more productive and colleges should prepare for instruction to become ever more individualized. Roueche (1973) has explored, sympathetically, the implications of this prospect for community colleges.

The educational decisions directly affected by the procedures and supporting studies just discussed are all of an institutional nature. At the beginning of this chapter, however, we emphasized that it was the nature of the public community college to put a maximum amount of decision-making responsibility in the hands of the student. How can assessments aid the student? In much the same way, they aid the institution. There is, however, one important addition. Institutions have appreciable resources to bring to bear on the interpretation of student readiness assessments. In particular, they can turn to the records of prior generations of students to make predictions about the prospects of the new student. Students, by contrast, confront what are seemingly unique, if not once-in-a-lifetime, choices. How can they effectively utilize their experiences when making these decisions? If students are to make good use of assessments of educational readiness, they will need the assistance of the institution.

The author was shocked at first by the finding of Gillo, Landerholm, and Goldsmith (1974) that community college faculty, administration, and trustees were all in agreement that colleges placed too great an emphasis on education and too little emphasis on the counseling of students. The shock was based on the author's concern that community colleges, which were chartered as teaching institutions, might become, to education's loss, diffuse social service

agencies. On further reflection, it seemed likely that these educators were concerned that the training mission of colleges will be frustrated unless improved counseling can increase student perseverance and decrease student instructional handicap.

How is counseling to be improved? We would answer that one way to improve it is to provide the counselor with better data. The more complete and accurate the information available to them, the better should be the decisions students are able to make. The counselor must have the information to be able to answer the question: What do this student's characteristics suggest will happen to her or him in the community college and beyond? The same kinds of predictor-criterion studies necessary to buttress institutional decision making are needed to provide the counselor with the hard, empirical information now in scant supply. We suggest that better "local" predictive studies will be more valuable than better-trained or even more counselors.

In closing, we should note that the challenge to improve the effectiveness of community college education through better assessment of student characteristics extends beyond the colleges themselves. The community colleges are teaching institutions and few have all of the resources needed to mount fully articulated assessment development programs. It would be unnecessarily redundant for the situation to be otherwise. A share of the responsibility for assessment development must be picked up by state coordinating groups, by testing agencies, and by university departments of higher education. This can be done without compromising the college's educational autonomy. The college need not be told what to teach or to whom. What is needed is technical assistance in developing assessments keyed to the college's own teaching and learning goals.

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Different types of transfer students require different assessment measures for admitting and advising them.

assessing successful articulation of transfer students

richard rinehart

For many reasons, approximately 1,000,000 students are transferring from one institution of higher education to another this year. While the total activity involves significant numbers of students who transfer to a college at the same level, and students who move from a four-year to a two-year college, this study concentrates on those who transfer from a two-year college to a baccalaureate program. This is not a minor group. The National Center for Education Statistics (1976, p. 77), reporting on high school seniors' plans, showed that more of them (30 percent) plan to attend a two-year college and then transfer to a four-year college than any other plan; including attending a four-year college (22 percent), and no college at all (24 percent).

The different reasons for transfer involve much more than the traditional intention of entering a transfer program with the express goal of moving on to a four-year college after two years of foundation studies. Other reasons include such things as changes of educational goals, and subsequent awareness of educational options and specialization opportunities, and family relocation in our

mobile society. These purposes become important, because they seem to have a bearing on the student's probable success. Therefore, after briefly reviewing studies of articulation between community colleges and four-year colleges, this article will describe some of the assessment measures and criteria that relate to transfer performance.

Interwoven into the analysis are several important issues, concerns, and questions. It is apparent that there are contradictions between people's philosophical positions, organizational assumptions, and operating practices or policies. Some of these are:

1. Should there be open access for transfer students within a system of higher education? Should the system make commitments to students for education beyond the associate degree?

2. Should the "transfer shock" phenomenon be considered in admission and retention policies?

3. Several sets of recommended policies have been adopted and approved by groups concerned with transfer students, yet they are more often ignored than followed. Is it possible to determine when these noncompliances are based on conclusive studies made by individual institutions, and when they are more a matter of tradition in the absence of any valid information?

4. If (as in a typical situation), grade-point averages from community college courses are only reasonable predictors of success in four-year colleges, and test scores or demographic data do not add significantly to the overall validity, what other facts or measures can and should be used in advising and/or admission decisions?

trends, classifications, and basic facts

There have been many statewide studies and dissertations on individual or regional transfer characteristics, and data have been collected for large systems such as the full set of public institutions in the State University of New York.

Extrapolating the conclusions and data of many studies leads to the estimate that there are about 1,000,000 individuals who transferred from one college to another in 1976. This number may be significant in that it represents a trend that is creating pressures for effective and appropriate assessment measures and policies. It is, however, extremely important that these assessment criteria and policies be based on a complete understanding of the different types of transfer.

Classification of Transfers. The following classification is proposed for clarity. The headings are basically those identified by Willingham (1974), with some additions and modifications.

1. *Articulated Vertical Transfer.* Students moving directly from parallel, articulated programs in a two-year college into the upper division of the program in a four-year college.

1a. *Articulated Vertical Transfer in Specialized Career Fields.* This is a specialized case of Item 1, applying to students whose associate degrees, by plan, are both entries to technical employment and specialized degrees required for entry to an upper-division program.

2. *Traditional Horizontal Transfer.* Students moving from one four-year college to another because of family migration, changes in educational plans, dissatisfactions, and/or financial constraints.

3. *Nontraditional Transfer.* Two- and four-year college transfers who do not follow the usual patterns, including adults who have been out of college for some years and those involving external or experiential studies and other situations in which the prior studies may not be valid for assessment purposes.

4. *Reverse Transfer.* Students transferring from a four-year to a two-year college.

5. *Open Door Transfer.* Transfers from one two-year college to another for a variety of reasons.

6. *Double Reverse Transfer.* Those reverse transfers who return to a four-year college. These individuals may be in normal transfer or in occupational programs at the two-year college, and may change their field in the process.

7. *Vocational to Changed Major Transfer.* These are individuals transferring from a career program in a two-year college to related but different baccalaureate programs in a four-year college. Willingham designates a "Vocational Transfer" classification, but this definition is modified in order to distinguish between those who go into a program that is designed for articulation with similar programs in four-year colleges (1a), and those who go into a program that normally involves a different articulation path. For example, a civil engineering technology graduate that enters a BET program in Civil Technology would be in the 1a group, whereas one that transfers into civil engineering, urban planning, landscape architecture, or vocational education would be in this group.

8. *Upside-Down Curriculum Transfer.* This classification includes individuals that transfer into "upside-down" degree programs

that exist in some four-year colleges. Sometimes involving a degree in "General Studies," these degrees are structured to provide mostly general education courses, management studies, or other general studies that come *after* technical training in two-year colleges.

Research results and policy assumptions are different for the several types of transfer. Therefore, assessment measures and criteria recommendations must be based on the specific type of transfer.

Tendency to Transfer. A recent and extensive study by Holmstrom and Bisconti, for the American Council on Education (1974), clearly documented a high transfer rate. They showed that 51.9 percent of all persons entering a two-year college as first-time, full-time students in 1968 had transferred to a four-year college by 1972. More men (55.7 percent) than women (45.3 percent) actually transferred, and other variables indicate a pattern of underrepresentation of women in transfer statistics. The difference between men and women was larger in the statistics for public two-year colleges than it was for the overall sample. Their results showed that women generally enter a two-year college with more defined goals, and that their plans included programs like nursing, secretarial science, and dental assisting. These curricula usually have less transfer potential than traditionally male career curricula (such as engineering technology, agribusiness, and law enforcement).

Holmstrom and Bisconti also showed (and this is corroborated by specific state studies) that there are significant regional and state differences in transfer rates.

Their statistics document the expected and obvious positive correlation between both plans to transfer at the time of ending the two-year college and good high school grades and actual transfer. Perhaps more importantly, they concluded that high school grades and affluence were not correlated with transfer for those individuals who did not initially plan to transfer.

One observation made by Holmstrom and Bisconti highlights a general problem: "Background factors, about which we know a good deal, are less important determinants than experiences at the junior college, about which we know considerably less" (1974, p. 24).

Patterns of Articulation. There have been several important surveys of articulation practices. The collected information is quite comprehensive, and it proves that the patterns are complex. Only rarely can one generalize conclusions and/or observations made in one college to broad situations. Variables such as state and regional

location, type of transfer, type of program, and institutional characteristics must be considered before any articulation decision or recommendation can have any general validity.

Frederick Kintzer summarized articulation agreements and practices in the fifty states in 1973 and updated the information in 1976. His analysis of emerging patterns provides a good basis for analysis. More details within selected states and more elaborate models of articulation agreements are available from the agencies involved. One example is the work of the Massachusetts State Transfer Articulation Committee. Under the leadership of Ernest Beals, a Transfer Information Service program is underway, sponsored by the College Entrance Examination Board. With successful experience in Massachusetts, the research system is being extended to other New England areas, and it is used as a model program for other areas. For example, Beals reported (1974) that 30,000 individuals applied for transfer, in the fall of 1973, to Massachusetts four-year colleges. While 61 percent desired transfer into the junior year of baccalaureate programs, the sample included most of the classifications described in this paper.

Warren Willingham, in a series of reports, has collected responses from national samples of four-year colleges to a variety of questions, and then identified problem areas. With Findikyan in 1969, he documented the numbers of transfer applicants (432,000 in 1966), the percentage that were rejected (32 percent overall), and other factors that were used in admission decisions. These, together with recruiting practices, were controlled by region, institutional control, size, and affluence. Admissability factors, analyzed for all categories, included high school record, test scores, personal qualities, recommendations, residency, reason for transfer, quotas, field of application, and grades. The degree to which these factors are used by individual four-year colleges is described by Proia (1975). This information, in handbook form, has particular value because it includes a large number of colleges and is generally accessible.

assessment measures/success correlations

Various assessment measures have been evaluated for their success in predicting transfer student achievement as assessed by their grades earned in the upper division, earned degrees, the time needed to complete degrees, and persistence versus different reasons for withdrawing. Credits transferred and junior standing are not

appropriate criteria of success because they are more a matter of policy and/or agreements. Longer-range measures of success, such as improved employment and personal satisfactions, have only been studied in extremely limited situations that cannot be generalized.

Grades Prior to Transfer. Grade-point averages and grades in specific courses have had a higher correlation with articulation success than any other factor; however, there are limits, problems, and extreme variations in the correlations. The existence of transfer shock and recovery has been known for a long time. In general, transfer students suffered a reduction of grade-point averages in the first semester or term after transfer and then they have improved in subsequent marking periods. The Knoell-Medsker study (1965), often considered a landmark study, documented the phenomena, and showed that it was not uniform for different situations.

First-term and cumulative differentials—the differences between the grades of transfer students and students who had studied at the four-year college for two years—by the type of four-year college were: −.58, −.50 for major state universities; −.16, −.09 for teachers colleges; −.28, −.22 for other state universities; −.25, −.20 for private universities; and −.46, −.39 for technical institutions. Differentials for individual four-year colleges ranged from +.08, +.04 to −1.14, −.93. The same students, three years after transfer, had graduation rates ranging from 73 percent to 53 percent; and academic dismissal rates of 13 percent to 7 percent by the type of institution.

Recent data from more limited populations have corroborated these general observations. However, some additional trends tend to complicate the situation. Some two-year colleges have adopted differing types of nonpunitive grading. The extent and particulars are rarely the same, and the individual college policies must be known to make intelligent use of grades for advising or admission decisions. A general grade inflation phenomena has been observed and discussed. In the last year, there has been some apparent reaction to this, resulting in a countertrend in two-year and four-year colleges. Some specific programs in four-year colleges have found that selected course grades can help predict success. Since each of these relates to a particular degree program, they do not relate to general progress, but the technique apparently has merit for specific cases.

Test Scores. Most of the researchers have concluded that standardized tests are not as valid as indicators of success as grades, and that taken in conjunction with pretransfer grades, they do not materially improve the prediction of four-year college grades.

There is, however, a consensus that some tests can be used for curriculum articulation decisions. The most widely used test for these purposes is the College Level Examination Program (CLEP) of the College Entrance Examination Board. Two of their goals for CLEP, as stated by Arbolino (1976, p. 15), are "To encourage colleges and universities to do a more valid job of placement, accreditation, and admission of nontraditional and transfer students" and "To help students seeking to transfer from one institution to another to do so with a minimum loss of valid college credit." Arbolino reports that approximately 1,800 institutions of higher education grant credit on the basis of CLEP this year.

Based on his independent experiences, Menacker has agreed that the CLEP examinations can well be used to resolve problems of specific courses and credit transfer. He includes general education course conflict areas and certain specific required courses needed for transfer. He adds the caution that tests should not replace the need for mutual understanding and communications between the two institutions, and that the CLEP test should not be used as an admissions rejection device (Menacker, 1975, p. 160).

Other Results. Additional conclusions reached by Knoell and Medsker (1965) have been corroborated by more recent studies with smaller samples.

1. "Students who transfer from a two-year college with full junior standing have slightly less than two chances in three of completing their baccalaureate degree programs within a period of three years after transfer, if they enroll on a full-time basis. About two thirds of those who complete degree programs do so within only two years after transfer with junior standing. The odds are about four chances in five that the students will complete a degree program eventually, with the time and institution unspecified. The probabilities are considerably lower for students who transfer with less than junior standing and for those who enroll on a part-time basis in a four-year institution" (Knoell and Medsker, 1965, p. 26).

2. General data for large numbers of people show that women, as contrasted with men, (a) are slightly more likely to complete baccalaureate degrees with two years of transfer, but are underrepresented in the total group that had completed degrees in three more years, and (b) are more likely to withdraw for personal reasons, but less likely to withdraw for academic reasons. These contrasts seem to be a result of the programs men and women select and sexual stereotypes rather than a result of female individual or group aptitudes. Women are overrepresented in teacher education and some other fields wherein transfer arrangements can be flexible;

and are underrepresented in such programs as engineering, where most individuals (native and transfer) take more than four total years to complete the degree.

3. "There is so much overlap in the distribution of academic aptitude of the transfer students who graduate and those who drop out that test scores do not distinguish very efficiently among the successes and failures. If junior college grades are used appropriately in screening, counseling, and/or selecting transfer students for admission to particular institutions, there should be little need to introduce test results as further evidence of capacity to do satisfactory work in the upper division. This does not, of course, argue against the use of test results obtained for transfer students for other purposes nor does it deny a significant relationship between test scores and grade-point averages. Some possible uses of test results at the time of transfer include placement in course sequences, demonstration of proficiency, qualification for honors programs, and validation of credit for courses for which transfer credit is not normally awarded" (Knoell and Medsker, 1965, p. 93).

4. "[We must also consider] other personal characteristics. Most nonacademic characteristics were found to have much less relationship to student performance than was found for high school and junior college achievement. Significant relationships were found for some samples of men and women at different types of colleges when enrollment outcomes were related to family nationality, parents' educational attainment, and father's occupation. The findings tended to support the belief that students with lower-class backgrounds who persisted through junior college and transferred would be just as likely to succeed as those with middle- and upper-class backgrounds who had had fewer handicaps to overcome" (Knoell and Medsker, 1965, p. 40).

A review of doctoral dissertations, institutional studies, and research journal articles of the past five years leads to some additional general observations.

1. Little or no correlation was found between effective transfer and aptitude or vocational preference tests or inventories.

2. High school rank or grades were uncorrelated or were much less correlated with transfer grades than were grades in the two-year college.

3. Conflicting conclusions were drawn on the relationships of students' age, sex, and marital status. Other conflicting results concerned the size of the prior college and rural or urban classifications.

4. Students transferring from a university branch to the main university (branchfers) generally did better and had more success than transfers from two-year or four-year colleges.

5. Reverse transfer student success depended on program selection and goals. Most of them planned to return to a four-year college, but usually not to the original institution.

recommendations and guidelines

All persons involved with advising and/or admission decisions need to be familiar with two sets of national guidelines and with any state or regional statements that affect them. The major recommendations, which are too important and detailed to be digested in this paper, are: *Guidelines for Improving Articulation Between Junior and Senior Colleges* (a 1966 joint statement of the Association of American Colleges, American Association of Junior Colleges, and the American Association of Collegiate Registrars and Admissions Officers, available from the American Council on Education), and *College Transfer* (working papers and recommendations from the Airlie House Conference of December 1973, sponsored by the Association Transfer Group). Both refer to the selection and use of assessment measures and criteria.

Menacker (1975) and Willingham (1972) have written about the fact that many of these recommendations are not being followed by four-year colleges. Menacker has presented some case studies and proposed the use of conflict theory to help understand the problem. Willingham has documented the areas of noncompliance and their relationship to the type of four-year college.

Concerning assessment measures and criteria, it would seem that the burden of proof for requiring ever-higher grade averages and requiring test scores must rest with the four-year college. The proof or justification needs to rest on institutional research that controls for the colleges from which students transfer, takes university major or program into account, and compares transfer with native students.

The recommendations stress the overriding importance of extensive communications between the two-year and four-year colleges, and the need for joint involvement in establishing articulation assessment criteria. These needs come up in almost every meeting, conference, or publication dealing with transfers. Advising and admission decisions require multiple channels of communication because of the changing status of curricular expectations at both

colleges, and changes of personnel. Articulation offices are needed in all colleges that include sizable numbers of transfer students in their student bodies. These offices must be able, through capacity and contacts, to monitor and facilitate mutual communications about faculty, admissions, counseling, and financial aid.

assessment summary

The following guidelines summarize the observations, research, and recommendations reviewed in this chapter. They focus on the measures and criteria to be used by four-year colleges in advising and admitting different types of transfers from two-year colleges.

Articulated Vertical Transfer (1). Having the largest number of transfers, this traditional articulation easily justifies formal and explicit transfer agreements and/or policies. The agreements are usually developed as part of a state or regional arrangement. Privately controlled and highly specialized institutions that include transfer students in their general goals, should also develop such agreements, if they are not part of a system agreement. The national recommendations described earlier provide a base for such agreements, and the numbers involved warrant the specific research needed to make sound provisions.

The agreements should involve minimum grade-point averages (GPA) in the two-year college only if specific research—controlled by prior institution and program—documents a "transfer shock" and only to the extent that the GPA is lower for transfer students than the institutional academic policies allow for probation. Advising and counseling effectiveness requires a knowledge of the differences between the two-year and four-year college in instructional styles, grading standards, program goals, and general environment. Assessment measures for admission to certain four-year programs (such as fine arts, music, and photography) may include portfolios, auditions, and special projects. These may be needed to measure professional performance that is expected to compare with that of native students or that is not reflected sufficiently in grades. Since these involve professional judgments, they should not be the sole criteria for admission. The review of such portfolios and special projects should include, if at all possible, a discussion with the applicant. Such discussions often reveal misconceptions on both sides, and allow the college to validate the independent work claimed by the applicant.

Articulated Transfer in Specialized Career Fields (1A). These special cases should follow these suggestions plus a specialized assessment device or procedure. Since the four-year college expects to build on the learnings in specialized programs from many two-year colleges, it is probably necessary to evaluate the match between the lower- and upper-division programs. This could be in the form of extensive communications between the respective faculties, and/or a test or questionnaire designed to cover the matching or overlap areas. It must be stressed that the two-year program's most important goals deal with direct employment and local situations. Therefore, the combination of devices must be clearly established as a means of improving the articulation success of the transferring individuals; not as general evaluations of the associate degree program.

Where assumed to be important in special fields, competencies are not adequately measured by grades, these transfers may also find it appropriate to use a special project, demonstration, or equivalent portfolio of skills.

*Nontraditional Transfer (3).** Since these are people who may have been out of college for some years who have had experiential learning and/or external studies, different assessment measures are needed. Earned credits should be accepted regardless of any time lapse, unless the courses have clearly changed in content and involve specific prerequisite information for noncredit learning, such as chemistry. CLEP or equivalent examinations should be used for both curriculum/credit transfer questions and for advising. These two functions are very likely to be related, because the individual's decision to enroll probably depends partially on the extent of transfer credit allowed. CLEP scores should, however, not be used to deny admission to baccalaureate programs. Admissions assessments should include a technique for measuring the congruence of the individual's goals, recent accomplishments, and the goals of the four-year college program. Interviews, references, required goal statements, and samples of recent work (for example, reports, reviews, and personal or employment accomplishments) may be used to evaluate readiness. Other assessment measures such as the available guides evaluating armed services studies, and state agency procedures can be used where appropriate (such as the New York's Regent's Degree and/or Empire State College summaries).

*The types of transfer identified earlier as 2, 4, and 5 are beyond the scope of this paper.

Double Reverse Transfer (6). These individuals may well feel that there is too much assessment data available. Whether returning to a different four-year college, or to the original institution (a small minority of this group), the key assessment question concerns the extent to which the original grades are used. It is suggested that advising interviews determine whether any significant change has occurred since the original four-year college experience. The changes may be marriage, full-time service or employment that relates to goals, major career/goal alterations, and/or different grade patterns in the two-year college. If there are such changes, it would be inappropriate to use poor original grades as a reason for non-admission. In this event they should be assessed and advised in the same fashion as other transfer students.

Vocational to Changed Major Transfer (7). Assuming that these people are making the change in conjunction with good advising or counseling, it should be possible to estimate the degree of similarity between the two-year college instruction and that of the proposed new major. To the extent that there is similarity in the instructional styles, evaluation procedures, general education goals, and overall environment, it will be possible to use grades, discipline references, and measures of persistence in assessing the potential for a successful transfer. If there is no reasonable similarity, it may be necessary to use test scores, high school grades, and general references. In any event, assessments for credit transfer may require the use of CLEP or equivalent tests. The determination of similarity requires a detailed knowledge of the two fields. Superficial impressions and perceptions are not sufficient. A student's previous work in civil engineering technology may be more similar to the college's urban planning course than to its civil engineering course.

Upside-Down Curricula Transfer (8). Since such programs in four-year colleges do not rely on specific prerequisites or prior learning, assessments can be based on general collegiate experiences. An overall grade-point average can well be used (taking transfer shock and recovery into account if research has documented it). Specific tests or course grades do not have the value for this group that they have among articulated transfers.

general observations

All of the research and recommendations outlined in this chapter lead to the conclusion that there is a strong need for extensive communications between two- and four-year colleges. Only

with regular and continuing arrangements for information exchange, can assessment measures and criteria be valid. Moreover, performance in the two-year college is always a better predictor of success than are high school grades or rank. And, finally, the four-year colleges must assume responsibility for properly validating any criteria that differentiates between native and transfer students.

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Richard Rinehart, director of the Center for Community/Junior College Relations of Rochester Institute of Technology, which annually enrolls over two thousand transfer students from

thirty states, has had prior faculty experience at Michigan State University and Lansing Community College and was the founding president of Bay de Noc Community College in Escanaba, Michigan.

Today most community colleges are committed to occupational education, and assessing student progress in this area, though complicated, can be accomplished by careful planning.

assessing student progress in preparation for work

s. v. martorana

The commitment of the "community college movement" to help students to choose and qualify for a life work has been challenged throughout its history. Even now, for example, despite the need for the world of education to become more relevantly tied to the world of work—a point of view given dramatic public notice by former President Gerald Ford in an address early after his assumption of the presidency—many powerful voices claim that a strong concentration on the student's vocational goals will give his education a handicapping disbalance and be, in fact, counterproductive to preparing him to cope with the rapidly changing future social order increasingly visioned by futurists in all fields.

Community college officials need to assess their occupational programs within this continuing controversy. The constant questions they will continue to face are: How can we evaluate the efficiency and effectiveness of the program in preparing an individual for work, and How can we assess the student's progress toward this goal?

problems facing assessment of occupational programs

This discussion now turns to some more specific difficulties in assessing occupational programs, which have generated doubt about the dedication of these institutions to occupational educational goals and to their capability to attain them. Six specific problems significantly affect community colleges' efforts to assess student preparation for work.

One: Adjusting to Growing Awareness of the Emerging Knowledge Society. Davis and Blomstrom (1975) have advanced two ways by which a knowledge society may be defined. One definition is that such a society exists "When more than half the gross national product is provided by the knowledge industries," organizations that produce and distribute ideas and information rather than goods and services; examples are newspaper, magazine, and book publishing, television, education, telephone communication, and data processing. A second definition is that a knowledge society exists when "more than half the labor force is employed in knowledge-based occupations rather than manual occupations. Knowledge-based occupations are most of the professional, managerial, and technical occupations as defined by the census" (Davis and Blomstrom, 1975, p. 391).

Peter Drucker expects both of these conditions to be realized in the 1970s, and discusses in depth the potential impact of that fact in his book, *The Age of Discontinuity: Guidelines to Our Changing Society* (1969). Under these conditions, knowledge rather than manual skill becomes the principal means of serving human needs. In such a social order, knowledge becomes the foundation of most of society's occupations and becomes the basis by which both current social support is routinely provided and the general civilization advanced. Knowledge becomes widespread, pervades all productive activities, and generates a large proportion of education- and knowledge-oriented citizens. Since the United States promises to become the first knowledge society in the world, there is no precedent to help us forsee what is likely to develop in such a society and to assist in preparing for its consequences.

These projections have a significant bearing on two major goals of occupational education. One of these goals is a sound preparation for competent work performance in the field of specialization pursued. Another is the development of a basic knowledge wherein the specialized activity is brought as close to being a knowledge-based enterprise as current expert understanding of its requi-

site skills, understandings, and concepts will allow. In short, vocational education is under more pressure today than ever before in its history to contribute to the general movement of the United States toward becoming a knowledge society.

Two: Avoiding the Dichotomy of Specialized versus Liberal Education. Is the best preparation for work one that is based on the study and acquisition of specialized skills and knowledge, or is the goal best achieved by study in the liberal arts and sciences? Even a brief review of the literature concerned with this question is beyond the scope of this presentation; but the effect of the continuing debate on the attention devoted to assessment of occupational programs must be noted.

A recent report of the National Education Association shows that this question still receives discrepant answers. The report was based on the "seven cardinal principles and objectives for the education of every American boy and girl" that had been formulated by the 1918 Commission on the Reorganization of Secondary Education as a major educational policy statement. The review was made and reported by a special study committee and was based on interviews with a 1976 panel of 48 prominent American educators and laymen and 130 student leaders from throughout the nation. With respect to updated views on the "cardinal objective" of vocational preparation, the report advanced this conclusion: "There was a clear division of opinion in the panelists' replies. Some respondents felt that specific vocational training or preparation should continue to be carried on in the secondary and postsecondary years. Others either stressed a general education as the best prerequisite to vocational success or argued that more and perhaps most vocational preparation should occur outside the school walls" (Shane, 1976, pp. 64-65).

Although this kind of philosophical ambiguity casts a cloud of doubt over assessment efforts, the fact that the polarized positions reported persist is deplorable, because it runs counter to the best thinking now expressed by both educational philosophers such as Sir Eric Ashby and practical educational leaders such as former U.S. Commissioner of Education Terrence Bell. The general view now expounded by such leaders is that a sound vocational education requires a balance of specialized and general studies, and that excluding either does not prepare students for the modern world of work.

Three: Recognizing the Complexity of Assessment. The task of assessing student preparation for work involves some idea of a

goal (competency in a particular field of work) and an individual person (the student trainee), as well as a process (program of planned learning experiences) and an environmental setting (an encompassing socioeconomic order in which the work is to be performed). To be complete, an assessment program needs to consider all four of these variables, each in relation to the others.

Failure to take into account the full range of complexities in the assessment process generates at least two negative consequences, both of which are present to some degree in the community college assessment efforts described later in this article. One is the adoption of oversimplistic assessment techniques, which lead to conclusions about program effectiveness that are either false or only partially true. The other is the acceptance of responsibility for results that are set by forces external to the college, such as labor unions, professional accrediting associations, licensing boards, and employer groups. A teaching-learning procedure made a part of an occupational curriculum cannot always make up for deficiencies in student qualification essential to success in a field of work (for example, a person five feet tall cannot realistically aspire to be a successful professional basketball player). And, as a general rule, neither can goals be set and programs developed that are based on unrealistic expectations of qualifications possessed by students (for example, the production of a basketball team on which all members are over seven feet tall). In order to be effective, the assessment task in preparation for work must be comprehensive and realistic in recognizing what factors in the process are, indeed, within the province of the responsible institution to control and modify and which are not.

Four: Agreeing on Appropriate Criteria for Assessment. The typical response to the question: "What measures are most practically and best applied to measure the effectiveness of an occupational program?" is "Acceptable performance of the specific job duties and the concomitant acceptable contribution to the production of the expected outcomes of the work involved (products completed, sales made, services rendered)." These are classic measures of the commercial and industrial output of the economy, and they are still viewed by many as the soundest measures of effectiveness in work. But they face serious challenge from a growing number of persons who feel that one's work should be fruitful in more ways than just the traditional economic ones.

For example, according to the NEA report mentioned earlier, a number of comments about vocational education could be sum-

marized under the label *humanistic*, that is, they deal with views on how human welfare can best be served in preparation for the world of work. For example, the report noted that "Independence and a feeling of self-worth depend on opportunities for exercising a vital ability. There is joy in reaching for excellence in some form. Vocational skills should help individuals achieve these personal satisfactions" (Shane, 1976).

During the past quarter century, there has developed a considerable literature on changing individuals' values and the values they expect from work, and on research into the relationships between types of work performed, programs of preparation for work, individual personality differences, and expressions of job satisfaction (see review by Mann, 1976, Chap. 2). All indications now are that measures of work values, satisfaction, and adjustment will be increasingly applied in the assessment process and in the future either will equal the more traditional measures of productivity in use or will supplant them.

Five: Differentiating Between Assessment and Prediction. Another element that complicates efforts to assess student preparation for work is the close and complex relationship that exists between *assessment*, strictly defined as an evaluation process, and *prediction*, defined as a forecasting process. Community colleges offering programs of occupational preparation are usually expected to provide two services to the student and to the employing economy: a curriculum and a teaching-learning experience that is valid and reliable in accomplishing the goal of preparing the student for a particular field of work, and some indication *in advance* that the student-graduate of the program shows reasonable promise of success in the field of work chosen.

Although obviously closely related, the procedures and techniques for assessment and evaluation need to be differentiated from those related to prediction of particular student-graduate performance. Assessment as evaluation emphasizes use of measures that judge the efficiency and effectiveness of the curriculum and teaching-learning processes of a college in producing known results set as outcomes of these educational elements—knowing *after the fact* what has gone into and what has resulted from the curriculum and the teaching-learning program, the question asked is: "Did it produce what it was expected to do?" Prediction, in contrast, stresses development and application of techniques to improve the capacity of the institution to judge *in advance* what will be the likely effects of the use of certain curriculum and teaching-learning

experiences on student growth *before* the expected outcomes are known and can be measured in actual, objective terms.

As will be shown later in this article, most of the assessment techniques currently in use in the community colleges combine the concepts of evaluation of known educational practices and outcomes with predictions of the worth of yet untested practices and unknown outcomes. While a complete separation of the two functions and procedures related to them may be ill advised, a sharper awareness of their valid differences could significantly improve both current practices and general understanding of community college occupational education.

Six: Recognizing the Current "State of the Art." Finally, among the problems facing assessment of student preparation for work is the current relatively unsophisticated level of practice. Although there is some variation between and among fields of work and levels of specialization, two basic guiding principles are widely followed in assessing students' preparation: (1) what the current practitioners in the field of work insist on and (2) what the socioeconomic setting in which the field of work operates will accept.

The first of the two principles is based on practitioners' evaluations of how new trainees meet their qualifications for entry into a field of specialized practice. The second principle is manifested in the interplay of demands in business, industry, government, and the professions for personnel with specialized occupational preparation, that is, in job openings; the number of persons claiming to be qualified and seeking jobs; and the qualifications set by employers for job entry. The assessment task in the community colleges cannot be expected to change this dynamic; few would advocate that this ought even to be attempted. The only choice, then, is to recognize that the assessment process cannot be fully isolated from the subtle effects of external forces that operate in the larger socioeconomic scene.

The most important implication of this discussion is that the assessment process in community colleges occupational education today is essentially a *subjective* exercise and is likely to remain so, for several reasons. One is the difficulty in assessing all of the relevant factors simultaneously. Another is that virtually all fields for which community colleges prepare students for employment are becoming more complex. This is true of those in which workers provide basic services and apply skills—television repairpersons, clerical salespersons, and so on—as well as those resting on broader principles and conceptual knowledge—nurses, quality controllers,

accountants, and the like. Efforts to eliminate the subjectivity now heavily present in the assessment process are, perhaps, to be commended, but until the "science of man" becomes more exact and complete, they are unlikely to succeed. Therefore, development and application of a "pure" scientific approach to assessment of community college occupational programs is also unlikely.

assessment theory and tests in occupational preparation

Within the last decade, efforts by occupational educators to build the advances being made in the broad field of educational assessment have accelerated. The Center for the Study of Vocational and Technical Education at Ohio State University, for example, has developed a procedure known as "Assessment of Internal Decision Events" (AIDE) to help ensure the high-quality output of occupational programs (1) by providing a better information base on which to make program and management decisions; (2) by strengthening program accountability; and (3) by applying the technique in ways that supplement and complement existing procedures. AIDE is claimed to ensure better outcomes by fostering systematic planning for student development, whereby educators perform an orderly series of steps to evaluate student progress. The procedures are designed to reduce happenstance development and, by use of external review boards or committees, draw on the expert knowledge of personnel from outside the institution as well as within (Lasell, 1974).

Standardized Assessment Measures. A variety of assessment instruments have been developed to measure student interests in and progress toward various occupational educational objectives. The reader is referred to the *Seventh Mental Measurements Yearbook* (Buros, 1972) for detailed descriptions and reviews of available tests. In the space available here, only a few examples can be mentioned to provide an idea of the variety and nature of the measures that are available and in use.

In 1966, the U.S. Office of Education funded the Achievement Measure Project, whereby North Carolina State University initiated work on the development of a number of postsecondary occupational achievement tests in trade and industrial fields. Later, the University of Illinois joined this project. Tests resulted in five trade areas and two technology areas: auto mechanics, heating and refrigeration, machine trades, electrical installation and maintenance, radio and television repair, electronics, and data processing.

Tests to measure perceptual and psychomotor objectives are found in both the Ohio Trade and Industrial Tests and the Achievement Measures Project Tests. Perhaps because of the difficulty of producing standarding tests in these areas, rating systems are used as one of the techniques for measurement of these behaviors. Baldwin points out a number of drawbacks of such ratings: (1) subjectivity of the evaluation, (2) inadequate instructions to the evaluator, and/or ill-defined ranks of comparison, (3) lack of training in use of the particular instrument, and (4) poor design of the instrument. Baldwin also points out some special problems to be remembered when attempts are made to measure psychomotor behaviors. The importance of standardized conditions cannot be overemphasized. Instructions are often given students orally in tests of this kind and slight variations in instructions can produce large differences in performance levels. Generally, it is also difficult to control the testing situation; raw materials, tools, and equipment need to be of the same type and in the same condition for use. Ideally, all students should be tested on the same or identical pieces of equipment, a condition not always easy to meet in the practical instructional situation. One of the most widely used instruments for assessing student interests in occupation is the Kuder Preference Record (Vocational). It is designed to yield scores indicative of a student's interest in each of ten different occupationally related areas; the scores are not related to specific occupations within these broad fields, but only to the general areas of activity to which the more specific occupations can be related.

The Gordon Occupation Check List is an instrument designed to measure interest in more specific occupational fields. This checklist is of particular interest to occupational educators in community colleges because it represents activities associated with jobs requiring less than baccalaureate-degree college preparation for entry, that is, jobs in the technical and semiprofessional levels to which most of the community college programs are related. The California Occupational Preference Survey was developed to confirm the occupational areas of major interest to a student and to help counselors and instructors to judge whether or not such interest would require a college education to be fulfilled. It uses a free-response format, as opposed to the Kuder forced-choice technique (Bauernfeind, 1969).

Instructor-Developed Tests and Related External Measures. By far the most common assessment practice in community college occupational assessment is the use of tests developed by faculty in the academic division of the college providing the program of in-

struction involved. This practice builds on one of the community colleges' strongest features in providing occupational education—an instructional staff that is itself expert in the field of practice. Instructors of occupational subjects in community colleges have practiced successfully in their specialty and are expected to keep up their close acquaintance with new developments in their fields. Use of instructor-made tests is virtually universal and reflects both some strengths and some weaknesses in the assessment process. Among the strengths are (1) the more frequent opportunities afforded instructors to check on the progress students are making toward the goals established in the program; (2) the greater possibilities for diagnosing student learning problems and thereby providing a basis for changing the curriculum or the teaching-learning procedures employed; and (3) the strengthened possibility for maintaining the relevancy of college programs of instruction to the actual world of work to which the student is aspiring. In addition, instructor and counselor observations, close to the student and maintained over periods of long duration can represent assessments of affective behavior. Thus, they avoid one of the drawbacks noted in our discussion of standardized measures, namely, that they cannot describe with precision the individual student as a complete person.

Among the weaknesses inherent in a heavy reliance on instructor-developed tests are (1) the possibilities that attention will be diverted from general job performance requirements to those skills and concepts that the faculty believe are most important; (2) the chance that concentration on job requirements more related to the interests of local or regional employers will handicap student job mobility after graduation; and (3) the likelihood that faculty will pay undue attention to the expectations of the specialized licensing bodies and external accrediting agencies in their fields. Heavy reliance on instructor-made measures also expose the community college assessment approaches to several weaknesses noted earlier in this article. Mention was made, for example, of the risk deriving from an oversimplistic approach to evaluation, overlooking some of the factors bearing on the task. Questions can also be raised about how strong in assessment theory faculty are.

other more direct assessment techniques

Tests such as those mentioned, whether broadly based on national norms or developed by a single faculty member, are, at best, indirect measures of how the student is likely to do in the

actual work situation. Community colleges make a constant attempt to bring their occupational programing and related assessment techniques to bear more directly and validly on the actual work situation. Energetic adherence to the principle that faculty members employed to teach occupational fields should be persons of established reputation in their specialties is one way to maintain relevance between the education provided and the work to be done. Another approach widely followed in community colleges and similar postsecondary educational institutions is to use actual job conditions as much as possible in the curriculum and the teaching-learning process. Several ways to do this can be cited—on-the-job training, work-study programs, cooperative education, and the like. All of them have the advantage of placing the student for a time in the real work situation and, in the process, of establishing a setting in which his performance and progress to the objectives set for him can be concretely evaluated. Most of them have an added advantage in that they also provide some financial aid to the student.

Cooperative education provides the best and most specific illustration of the several types of specific job experience tied into student learning experience. Today over five hundred colleges and universities in forty-seven states and the District of Columbia operate cooperative education programs. Bender, Lucas, and Holsenbeck (1975, p. 9) describe the framework for a complete cooperative education program as follows: "*Cooperative education* is a postsecondary work experience program designed to produce academic career, and/or personal *enrichment* opportunities for a student while he or she is *fully enrolled* and registered at the institution. The work experience involves a *definitive* period or periods of employment supplementing full or part-time study on campus. *Evaluation* of the experience is performed by all participants (student, employer, and institution) based on *predetermined learning objectives* based upon the work experience itself. The student's participation is considered an *integral* part of the total educational process for that *individual*."

According to assessments of cooperative occupational educational programs, students benefit in many ways. Besides assuming personal responsibility for managing one's time and fiscal resources in much the same manner as working adults and gaining the opportunity for career exploration from a worker's perspective, students develop better understandings of the application of theoretical concepts to field production. They become more motivated to learn, develop a greater interest in the subject matter of their specializa-

tion, and express more self-confidence in their field performance. Furthermore, they acquire and demonstrate a more questioning and critical attitude in their class-related studies as a result of their cooperative education work experience. Finally, their transition from college to full-time work is made easier by the orientation they get to the jobs, the enhanced opportunity to develop peer relationships with other workers, and the chance for employers to observe the quality of their actual on-the-job performance (Tyler, 1971; Wilson and Lyons, 1961).

follow-up studies of graduates

The ultimate evaluation of the success or failure of students completing occupational programs is made in the marketplace of work. Persons responsible for programs of occupational preparation early recognized this axiom, and follow-up studies of graduates began to appear very early after the first development of vocational education under the Smith-Hughes Act of 1917. Early studies of junior colleges included analyses of the later work and study patterns of the graduates, and, more recently, community colleges throughout the nation have shown increased interest and activity in determining, from their former students, how well their programs have served them, their career interests, and the work objectives of their employers. The deepened interest in such follow-up studies stems in part from encouraging recent federal vocation education legislation and in part from the recent shift in composition of the student body, which shows increasing proportions of students enrolling in occupational programs and more older and more part-time students.

The federal Vocational Education Amendments of 1968 specifically recommended that follow-up studies be used more intensively as a method of assessment of occupational programs. One year later, the National Advisory Council for Vocational Education (NACVE) issued a statement urging schools and colleges offering occupational programs to consider their obligation to students as extending beyond the point of graduation. The report stated, "Placing the student on the job and following up his success and failures provide the best possible information to the school on its own strengths and weaknesses" (NACVE, 1969, p. 3). In 1970, NACVE went even further and said, "Schools should invest as much in follow-up and counseling for those who drop out as for those who remain in school" (NACVE, 1970, p. 6). And in 1972, NACVE

recommended that "job placement and follow-up services be considered major parts of counseling and guidance programs" (NACVE, 1972, p. 7).

Angelo C. Gilli, a nationally recognized authority in the conduct of follow-up studies on a large scale, identifies several areas in which such projects provide assessment and related decision-making data for the colleges concerned. Gilli (1975, p. 25) notes that they provide information about:

- Curriculum relevancy as assessed by former students, at the time they are placed on their first jobs and several years later.
- Overall value (both immediate and long-term) of the program to former students.
- Quality of training and education, as assessed by employers in terms of their employees' performance on the job.
- Determination of job characteristics (particularly in terms of activities oriented to people, data, and things).
- Job satisfaction of former students and graduates.
- Determination of the mobility characteristics of former students and graduates, with respect to both job mobility and geographic mobility.
- Characteristics of former students and graduates with respect to continuing education.
- Determination of other demographic data needed for long-term decision making.

In addition to these constructive outcomes of follow-up studies, graduates of occupational programs benefit directly from well-planned follow-up studies. According to Seymour Brantner (1975), students who graduate from occupational programs need continuing support from the institutions that have trained them; this can be provided through continuing contact with graduates to enhance job adjustment, especially during early work experience, and through continuing education. Assistance in removing a new worker's dissatisfaction or helping him to determine what additional preparation he should seek are typical of this kind of support.

In the interest of developing appropriate evaluation models for community colleges, a study was made in 1973 in which data-gathering instruments and reports of follow-up studies were analyzed intensively. The project produced the following list of recommendations concerning the development and use of follow-up studies in community colleges (Williams and Snyder, 1974, pp. 40-42):

- Designers of follow-up studies should make use of consultants and texts on follow-up research as they plan their studies.
- In planning follow-up research, designers must give attention to identifying the population to be studied and selecting research samples.
- Questionnaires should be designed carefully to elicit maximum student response.
- Precollege employment experience should be taken into account.
- Greater effort should be made to gather longitudinal data.
- Employers' opinions of former students should be sought in evaluating employment outcomes of occupational-technical programs.
- If follow-up research is to be credible and useful, researchers must provide careful descriptions of their research, including procedures, subjects, and authorship.
- If follow-up studies are to contribute to institutional evaluation and accountability, they must be designed to answer specific questions and the data must be interpreted for nonresearchers at colleges and other interested agencies.
- Educational goals must be defined.

Follow-up studies should seek information relating to the affective behavior of the former students as well as information more objectively determined, such as demographic descriptors and measures of job success such as salaries, promotions, and the like. The data relative to attitudes, perceptions, and value judgments should be adapted to the usual questionnaire survey techniques used in follow-up studies. A sophisticated assessment of the results of occupational programs on objectives reflecting values and attitudes will require not only conventional follow-up studies but also an augmentation of these by more penetrating personal interviews, personality inventories, and similar informational devices administered to at least a sample of the college's occupational education graduates.

institutional accountability needs, better student assessment

The word *accountability* is widely used today to describe the intensely close surveillance being given all kinds of educational institutions by their several constituencies. Community colleges are no exception, and each of their several constituencies, from outside and within—students, supporting taxpayers or private benefactors,

employers of graduates, faculty and administrators, and boards of control—exert their special demands for qualitative and quantitative evidence that the particular programs and services they deem essential are being provided. This author has defended the legitimacy of the claims of each of these constituencies elsewhere (Martorana, 1975). Powerful reasons exist to expect that the pressures for accountability will remain steady or even increase in the foreseeable future.

In assessment and accountability, the "state of the art" still relies on techniques developed in guild training, on the fact that faculty are either currently or were recently practitioners in their specialized fields, are close to and know the criteria of success that come from the applied work situation, and therefore can judge by subjective and personal observation to what extent and how well the student is progressing toward these goals. A wide gap still exists between the approaches being developed and tested by the theorists and researchers in student assessment and the approaches used by the teaching faculty and counselors in the community colleges. A closer working relationship between theorists in testing, evaluation, survey and follow-up studies, attitude and interest inventorying, and so forth, on the one hand, and professional staff members working with students in the community colleges, on the other, would appear to be in the best interest of all concerned, because both groups are seeking the common goal of a better science and practice of instruction in postsecondary occupational education. Community college staff development programs, now a growing institutional activity nationwide, should press for such a liaison. The result will be a more sophisticated capability in student assessment than now is the case, providing a more complete and convincing accountability, not only to such groups as the employers, those who support community colleges, and those responsible for the programs in the institutions themselves, but also, and most importantly, to the student. In the final analysis, students' progress in their careers is the ultimate criterion of the utility of the methods we have discussed, and represents the area where improvements in the "state of the art" will reap a due reward.

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Community college students may have unanticipated advantages during the coming decade, even though earning a two-year rather than a four-year degree tends to limit their potential for social mobility.

assessing student educational and occupational progress

brent mack shea

From the Horatio Alger stories of the last century to contemporary rags-to-riches accounts, the belief persists that success is primarily an individual matter. The individual success ideology, so pervasive in our society, has clearly placed the blame for failing to succeed on the individual: Everyone has an equal chance, so if you end up with less than your share of the goods, no one can be blamed except yourself—and schools are the instrument for giving everyone an equal chance. This egalitarian argument is especially convincing when access to colleges is opened up, to the extent of guaranteeing *every* high school graduate admission into higher education. After all, college *is* the vehicle for success, isn't it? And if everyone can go to college, everyone has the chance to succeed, right? What such accounts *omit* is more informative than the accounts themselves, and includes information about (1) *how students vary on dimensions affecting their progress through school*, (2) *how schools affect student progress*, and (3) *how student progress (or success) might be assessed.*

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how students vary on dimensions affecting progress

Making sense of how students, educational institutions, and success are related is unlikely unless the attempt is somehow qualified. One might choose to explore how upper-middle-class, high-ability high school seniors progress through elite universities and on to high-status occupations. But one might better look at the progress of generally lower-income, lower-ability students through two-year colleges and on to the labor market. After all, it is the success of *these* students that provides the best test of democratic opportunity.

Student Profile. In a system where the structure of secondary education is determined by the structure of higher education, and higher education is shaped by the needs of graduate education, it is not surprising to find that two-year students are typically characterized in relation to their peers at four-year colleges, usually in terms such as "less than" or "not as likely as." To define these students, the following profile is offered:

Two-year students come from families with lower incomes than do four-year students. On measures of academic ability and aptitude, including intelligence—measured and self-appraised—two-year students fall below their age mates at four-year institutions (Cooley and Becker, 1966; Astin, Panos, and Creager, 1967; Cross, 1968, 1969; O'Banion, 1969; U.S. Bureau of the Census, 1972; Shea, 1975b). From making plans for college to dropping out, two-year students occupy a less favorable status. Being less likely to have even discussed college plans with anyone while they are in high school, and, if they have, being less likely to have been encouraged to attend college (Rehberg and Hotchkiss, 1972), they are not likely to have their enrollment in college taken for granted by anyone. If they *do* get to college, they sometimes encounter peer group opposition, as well as parental disapproval (O'Connell, 1970). Being less likely to believe in schooling for its own sake (Richards and Braskamp, 1967)—a belief useful in motivating students to continue their education—and less likely to believe formal education will result in personally beneficial outcomes, and having lower educational and occupational goals anyway, two-year students orient themselves to careers having both immediate payoffs and close relationships between training and subsequent employment (O'Banion, 1969). Since they are less inclined to decide to go to college—and then more likely to defer enrollment (Astin, 1975; Medsker and Tillery, 1971)—two-year students are more likely to attend part-

time once they get there, mostly because they have part-time employment. For the same reasons as for these part-time statuses, two-year students are more likely to live at home, under the often negative influence of family and friends and the consequently lower involvement in educational activities not directly related to education per se (Cohen, 1969; Monroe, 1972).

Additionally, compared with students in transfer (college parallel) programs, students in terminal vocational programs are significantly lower on all measures of socioeconomic status, including family income, father's occupation, and father's education. While half the students enrolled in two-year transfer curricula are from middle-class families, less than 20 percent are from working-class families. In vocational programs, however, only a quarter of the students are from middle-class backgrounds, while over a third are from working-class families (Zwerling, 1974).

Cognitive and Noncognitive Development. By the time they get to college, students have already developed in both cognitive and noncognitive directions. An example of this development is the profile just described. Behavioral scientists who are optimistic about human potential for fundamental change see this development, not as a limitation, but as a starting point (Berger and Luckman, 1966). The learning that takes place in schools, the workplace, and through the effects of media—*secondary socialization*—is portrayed as having the potential for overcoming the *primary socialization* of early family experiences (Birren, 1964). Consciousness-raising efforts that result in the taking on by adults of nontraditional sex roles are one instance of this potential for overcoming the early learning of primary socialization. Other behavioral scientists, however, consider that early and continuing socialization experiences in the family persist into adulthood, so that *everything learned after a person's early years stands in some continuous relationship to the past.* Indeed, this primacy of family environment is the outstanding message of both the Coleman Report (Coleman and others, 1966) and Christopher Jencks' *Inequality* (Jencks and others, 1972), two major studies of the impact of the secondary socialization that occurs in schools. From such research as this, we have learned that college-age students are as they are largely because of cognitive and noncognitive development occurring exclusive of their contact with the educational system. Schools are seen as receiving students with tremendous variation on all kinds of characteristics affecting their progress through school, including the cognitive trait of measured intelligence. Noncognitive traits, such as *achievement motivation*

—the impetus to excel (McClelland, Atkinson, Clark, and Lowell, 1953; McClelland, 1961)—along with implementary values such as *internal control* (the belief one controls his environment), are likewise understood to have developed in the context of the family. The finding of the Coleman Report that internal control explained more difference in student achievement than did *any* school resource (Mosteller and Moynihan, 1972) prompted some researchers to conclude that schools are marginal institutions and to suggest boarding schools as a way to equalize student achievement.

Internal control is a good example of the kind of noncognitive development with which schools begin. Positively related to social class (Kluckhohn, 1950; Rosen, 1956), internal control is an *implementary value* of achievement motivation: In order for achievement motivation to make any difference in behavior, it must be accompanied by a sense of internal control. That those near the bottom of the social structure perceive themselves as having little control over their environment is not surprising. Neither is it surprising that, just as those near the bottom of the class structure will want to improve their statuses, those near the top will want to maintain theirs (Boudon, 1973). In these terms, truck drivers' children might want to become computer programers, teachers' children might want to become lawyers, and lawyers' children might want to become lawyers. This is not because truck drivers' children have *less* impetus to excel than lawyers' children; they may well have the same amount. Indeed, it could be argued that truck drivers' children aspiring to become lawyers would be evincing a great deal *more* achievement motivation than lawyers' children with the same career goal. Ambition, as defined by career goals, would have to be *inversely* related to social class in order for all students—children of plumbers as well as children of scientists—to want to become, for example, physicians. And we know that such aspirations are *positively* related to class.

Educational Ambition. The most disadvantaged students entering our system of higher education are often thought to be those with low educational and occupational career aspirations. These career goals vary in such a way that those born into a less favored place in the social structure end up in a less favored place, just as those with more fortunate origins maintain their relative advantage. In this respect, "cultural disadvantage" is indeed a reality. How such a static situation comes about is best explained by a variable that mediates the effect of class origins on career goals. This mediating variable is the influence of a student's "significant

others" (parents, peers, teachers, and guidance counselors) on the student's aspirations. If the influence of class were paramount, one would predict that students from working-class backgrounds would be encouraged to pursue traditional working-class occupations and educational levels by these significant others, and consequently discouraged from pursuing somewhat higher goals. This *does* happen, though not to the extent anticipated. Increasing evidence points to the major influence of *ability* on the encouragement of both teachers (Williams, 1976) and guidance counselors (Rehberg and Hotchkiss, 1972; Rehberg and Rosenthal, 1976) in secondary schools. Class *does* exert an effect on significant others' encouragement, but this effect is strongest on parents and peers, whose influence on aspirations is considerable. It is double that of teachers.

Much has been written about the importance of ambition in explaining differences in how far a student goes in school (Sewell, Haller, and Strauss, 1957; Rehberg, 1967; Sewell and Shah, 1968; Sewell and Hauser, 1972; Rehberg and Hotchkiss, 1974; Picou and Carter, 1976; Spencer, 1976; Shea, 1976; Rehberg and Rosenthal, in press). And whether ambition is identified as educational and occupational aspiration level, career goals, achievement motivation, or the impetus to excel, it goes a long way toward accounting for differences in how far one goes in school. The disadvantage accruing from low socioeconomic status is explained largely by low educational and occupational aspiration levels, aspirations influenced by peers and parents who themselves are affected by social class. Owing to class background effects, students *want* different amounts of schooling. This is a persistent effect of class origins, despite the fact that schools, at least through the ability-based advice of teachers and counselors, act independently of student origins. Given the limited number of high-status occupations, the strain on the existing social order would be great *if* all students had similarly high career aspirations. Some mechanism for lowering these aspirations would seem necessary in order to prevent high levels of mass dissatisfaction. And this is where the second part of this article begins: the impact on student progress of two-year colleges.

how schools affect student progress

The idea that educational institutions that are relatively unselective in admissions have as a major purpose the lowering of student aspirations was described fifteen years ago by Burton R. Clark (1960) in an article based on the experience of San Jose City Col-

lege in California. It appeared that students who on entrance wanted to pursue the transfer curriculum at San Jose ended up by terminating their educations in vocational curricula. A process described as "cooling out" was delineated, which involved the structured lowering of initial ambitions to conform more closely with student aptitudes and achievement levels. Through this process, students were ultimately convinced they did not want to become professional and managerial workers anyway, so they ended their educations, satisfied to become clerical, sales, and technical workers, secure in the knowledge that they had only themselves to blame. By means of counseling and guidance efforts aimed at lowering aspirations, students were made to realize that they had been given an equal opportunity for high-status occupations, but, because they did not measure up to academic standards, they had failed while others succeeded. "Failures" transferred to terminal vocational programs by the beginning of the second year, and "successes" transferred to four-year colleges at the end of the second year.

The *existence* of this cooling-out process implicitly assumes several points to be examined here. These assumptions are: (1) that students have *uniformly* high aspirations; (2) that there is a *need* for a cooling-out mechanism; (3) that those identified as being cooled out *have no desire* to be; and (4) that both educators and educational planners *intend* that things work this way.

First, from evidence cited earlier in this essay, it is clear that students simply do not have uniformly high aspiration levels. Over a decade of social mobility, research has told us that student aspirations vary positively with social class, and that those entering two-year colleges have lower aspirations than those entering four-year colleges. So what is there to cool out?

Second, the existence of a cooling-out process assumes the necessity for a mechanism that makes students blame themselves for their own failure to get a high-status occupation. But blame for personal failure does not *need* an explanation such as the cooling-out process: It is already adequately explained as a function of the well-documented and virtually universal emphasis on the *individual* nature of success and failure in our culture (Wylie, 1954; Wohl, 1954; Lynn, 1955; Chinoy, 1955; Berger, 1960; Thernstrom, 1964).

Third, it is assumed that students identified as lowering their career goals so do somewhat *unwillingly*, in a spirit of resignation to their failure to perform as well as other students. Cooling out *could*

be construed as an *ideal* socialization experience because it makes people want (or aspire to) what they must have, as determined by the relative availability of various levels of work. But it could also be argued that students, because of socioeconomic variation in their career goals, *already* want what they must have. Also, the *appearance* of lowered aspirations as described in the cooling-out process might be explained differently: as it is, the fact of registration in a transfer curriculum is immediately interpreted as evidence of something more than just a *popular* or acceptable thing to do. From what we know about the discrepancy between attitude and behavior, however, we might conclude that the initial registration in a transfer curriculum of two thirds of the two-year college entrants may have little to do with what they eventually intend to happen. That is, in the same way students sometimes state acceptably high career goals, they may tend to register in an acceptably high-status program. And this makes their subsequent registration in a terminal program nothing more than bringing their behavior closer to their original intent. A final point of contention about the assumption that those being cooled out do not desire it is Jerome Karabel's (1972) somewhat dated contention, in his review of the cooling-out process, that students themselves are not pressuring institutions for occupational training programs. Yet students *are* demanding more marketable skills, maybe not immediately on entering college, but perhaps after minimal exposure to information about the labor market. Of course, *any* effort to apprise students of labor market needs may be misconstrued as part of the attempt to cool out potential transfer students.

Fourth, the term "cooling out," given its origins in descriptions of the behavior of hustlers at carnivals, who take all they can get away with from customers, assumes the *conscious intent* of giving the cheated customer a prize just adequate to prevent him from concluding he has been cheated. The notion of an educational planning elite *consciously promoting* the cooling-out mechanism in two-year colleges is vaguely analogous to the conscious motives wrongly imputed to academicians by Clark in his original specification of cooling out. Karabel, in reassessing the cooling-out process, criticized Clark's analysis that the structured lowering of ambitions to conform more closely with academic performance emerges out of a conflict between academic standards and unselective admissions criteria. The existence of a cooling-out process, that is, does not require that educators *intend* it to occur as a way of maintaining academic standards. It is sufficient that large numbers of students

have aspirations that cannot be accommodated by an occupational structure that is narrow at the top. Karabel explains that cooling out was not consciously devised by professors, or anyone for that matter, but that it just developed out of the discrepancy between student aspirations and occupational opportunities. So even if commitment to high academic standards were to be abandoned (as it may have been lately), cooling out would persist.

As I have argued, I do not believe a cooling-out mechanism is needed; but that the process thus described occurs naturally, because of the *absence* of uniformly high aspirations among students, the already pervasive belief in the individual nature of failure or success, and the lack of convincing evidence that students *do* prefer transfer to vocational curricula and *actually* intend to pursue a four-year degree on entering a two-year college. But even if a cooling-out process *were* needed, actual intention to cool out does not have to be invoked in the case of faculty any more than it does in the case of educational planners. It is simply not necessary to attribute to educational planning elites, such as the Carnegie Commission on Higher Education and the state boards of regents who design educational master plans, the motivation of keeping the individual success and democratic opportunity ideology intact by encouraging the expansion of two-year colleges.

At least two alternative explanations for the expansion of education at the two-year level are obvious: First, the expansion of education at the two-year level may be seen as a rational response on the part of educational planners to projections of the expansion of lower-level work, for which two-year colleges prepare students. Second, it is plausible that planning elites, realizing some of the same things the President's Science Advisory Committee on Youth (Coleman and others, 1974) also realized, have decided to bring youth closer to traditional family socialization influences, and see the expansion of education at the level of two-year commuter colleges as a way to do this. Both these explanations will be considered in greater detail in subsequent sections of this article, on the hidden curriculum and career socialization, respectively.

San Jose City College in 1960—the one Clark studied and the basis for his "cooling-out" idea—may not have too much to do with two-year colleges in the mid-1970s. Furthermore, since it is evident that the expensive curricula are *terminal* curricula (Morsch, 1971), two-year colleges, facing reductions in funding would be expected to channel students into the liberal arts. Also, colleges need all the students they can get to prevent additional cutbacks in funding.

Such contemporary conditions as this favor liberal arts programs, which are inexpensive and absorb large enrollments.

To conclude, by focusing on a *previous* situation of structured inequality in which working-class students were channeled away from four-year colleges and high-status careers and into two-year colleges and lower-status occupations, the proponents of the idea of the cooling-out process ignore the present class struggle for mobility that is taking place in higher education between four-year liberal arts students and terminal two-year vocational students. During the 1960s, when an increasing number of children of upper-middle-class origins were "dropping out" of the established reward system, with its professional and managerial career patterns, some working-class students were willing to stay in the educational system long enough to gain access to the kinds of upper-middle-class careers traditionally reserved for the children of the upper-middle-class (Berger, 1971). Working-class students are taking available work again—this time, not because upper-middle-class university students have decided to drop out of the system, becoming downwardly mobile voluntarily, but because the system is dropping them out. As predicted by Alexander Delfini (1969), higher education may become the locus of a class transformation in which the children of affluent upper-middle-class professional and managerial workers will be displaced by technical workers from working-class backgrounds who become increasingly important with advances in technology. The professional and managerial work that four-year students used to be guaranteed is no longer expanding (Braverman, 1964; Freeman and Holloman, 1975). One example of this is the academic profession, which is a casualty of at least two forces: (1) the decrease in the birth rate after 1957, causing smaller enrollments, and (2) the high number of children born during the population boom of the late 1940s and early 1950s who were educated to the level of the doctorate. Students are becoming overqualified for available work. As this crisis deepens, more people will be needed in the human services, especially in the areas of therapy (to help people adjust to the frustration of underemployment) and recreation (to help people compensate for their underutilization at work). Although the largest labor market growth areas are in such service occupations, which are least subject to the effects of automation, additional slots in the occupational structure will be occurring at the level of technical and clerical work—the kinds of work for which two-year college terminal vocational programs prepare students—such as the medical and data technologies and two-year

accounting degrees. With two-year vocational students from working-class backgrounds employed at their level of education and four-year liberal arts graduates from middle-class backgrounds underemployed, the cooling-out function attributed to two-year colleges should be reconsidered.

Despite the outcries against terminal programs (such as Riessman, 1972; Zwerling, 1976), most of which are grounded in the cooling-out explanation, the overriding impression one is left with, after studying the evidence, is that two-year students being prepared for entry-level work may not be at such a disadvantage, relative to many liberal arts graduates with a bachelor's degree. Indeed, the student with the greatest advantage may be the two-year vocational student with a bachelor's degree: A more marketable combination is difficult to imagine.

colleges as facilitators of student progress

This reconsideration of the cooling-out process should not be construed as a conservative denial of a hidden function of higher education. *In no way does this suggest things are working in a properly egalitarian manner.* Certainly the aspirations of terminal four-year college students are being frustrated. They are not maintaining their social positions, even if two-year students are relatively improving theirs. This analysis, while portraying two-year terminal programs more positively than is suggested by the "cooling-out" explanation, also admits two class-related influences: (1) the previously discussed development of noncognitive traits during primary socialization, and (2) the effect of the educational curriculum on noncognitive traits of students, to be discussed hereafter.

The Hidden Curriculum. A prominent feature of education is the *hidden curriculum*, a term that refers quite broadly to curriculum *structure* rather than to *content* (Illich, 1971). While the *content of what is being taught*, as defined by *subject matter*, is an obvious characteristic of the curriculum, the *structure of what is being taught* is not as obvious. This structure involves the kinds of traits that get emphasized—whether they be docility and obedience, or initiative and independence—while the curriculum content is being taught. In addition to the way classroom learning is structured, the way the educational institution itself is structured is also of interest. One reason for the nature of the hidden curriculum in both classrooms and educational institutions is that it mirrors the organization of work (Gintis, 1971; Bowles and Gintis, 1976; Shea,

1975a). In terms of this explanation, educational institutions are held to reinforce those traits that are first *emphasized* at home (Kohn, 1969), then *reinforced* in school, and finally *required* at work: In a working-class high school, the traits of obedience, docility, and subordination would be emphasized. In a middle-class high school, traits such as independence, autonomy, and initiative would be emphasized. The same traits would be emphasized in, respectively, a non-college preparatory classroom and a college preparatory classroom in the same school. This prediction is made on the assumption that socialization in high schools will anticipate socialization emphases in both the higher educational institutions and the workplaces students eventually encounter. In the case of higher education, it has been shown that the hidden curriculum of two-year colleges, compared to that of four-year colleges, typically involves fewer grading options, more stringent class attendance requirements, and less permissive social regulations (Binstock, 1970). (It is my impression that the employees at two-year colleges, notably the faculty, are also subjected to much more rigid control than those doing identical work at four-year institutions.) The reason for these differences in the hidden curriculum is the kinds of work for which these institutions have always prepared students: lower-level clerical and technical work for two-year graduates, and professional and managerial work for four-year graduates. Which is to say that, just as independence, discretion, and judgment are required for success among professionals and managers, lower-level work requires obedience, punctuality, and conformity.

The Uncertain Impact of Education. A very serious problem with the socialization for work explanation is the uncertain impact of education on noncognitive development. It appears that the effects of schooling can be explained almost entirely when enough student body characteristics are taken into account (Astin and Panos, 1969; Feldman and Newcomb, 1970; Jencks and others, 1972). An increasing proportion of students beginning their educations enroll in two-year rather than four-year institutions, partly because of state master plans and partly because the rate of financial return to four-year graduates on their educations is declining (Freeman and Hollomon, 1975; Freeman, 1975, 1976). Given the class background of such students, whether two-year institutions can have any impact on their noncognitive development is questionable. A whole body of research demonstrates that schooling merely extends preexisting differences deriving from early family socialization. If this is true, in order for the socialization said to go on in

educational institutions to have any effects, it would have to correspond closely to early socialization. For example, students would have to be from working-class backgrounds in order for the hidden curriculum of two-year colleges to *reinforce* and *extend* preexisting traits. It would not work with upper-middle-class students, because traits emphasized in upper-middle-class homes such as initiative, independence, and questioning of authority, *could not be reinforced or extended* in an educational institution structured in such a way that *subordinance and obedience are emphasized instead.*

Social Mobility. The static nature of the class structure suggested by this reinforcement of workplace requirements in schools may be combined with rapidly accumulating evidence from social mobility research (for example, Rehberg and Rosenthal, 1976) that a high school graduate's social class origins are quite strongly related to the student's future occupational status, as indicated by enrollment in a four-year or two-year college or no college at all. Although this fairly strong relationship can be explained partially by pointing to some combination of educational and occupational aspirations and opportunities, a contributing explanation is that parents, in the socialization of their children, emphasize traits required of themselves in the workplace (Kohn, 1969), which are reinforced in the schools their children end up attending (Binstock, 1970; Bowles and Gintis, 1975; Shea, 1975a), and ultimately required in the work they end up doing (Gintis, 1971). By this line of reasoning, very few students would name experiences that would change their traits. All influences would reinforce and extend primary socialization rather than attempting to modify early learning.

A major problem with this worker trait analysis is that it negates the possibility of individual social mobility, and this is a fact that must be addressed. The proliferating literature on the attainment of status in industrialized societies shows that individual success is a function of traits on which schools may have little causal effect. Cognitive traits, such as measured intelligence or grade-point average, while good predictors of success in school, are only fair predictors of occupational status, and are rather poor predictors of the huge range of economic success within most occupations. Noncognitive traits—traits that schools seem, at most, to extend and reinforce—appear the most likely causative factors in economic success. But these traits go badly measured and many go unidentified.

Career Socialization. As industrialization has proceeded, greater differentiation of occupational and educational levels has

occurred. At the same time, many educative functions of the family were taken over by the educational system, where youth have come to spend increasing amounts of time stratified by age. In such environments, the potential is great for peer socialization of each other in directions that are largely independent of the influence of adults. This was especially evident throughout the past decade. First, because of the high birth rate throughout the 1950s, the ratio of youth to parents and teachers increased. Second, the period youth spend in educational institutions isolated from the influence of adults also increased. The increase in the ratio of socialized to socializers combined with the increased years spent in school, had as a major result the development of a youth culture. Although this culture was transitional for the large age cohorts of youth passing through it, its activism was a significant event of the 1960s. The Panel on Youth of the President's Science Advisory Committee, in their report, *Youth: Transition to Adulthood* (Coleman and others, 1974), made many proposals that would have the effect of bringing youth back under the traditional influence of adults. All of these proposals had to do with ending the separation of youth from adults, mainly through the earlier introduction of youth to work environments. The behavior of youth, under the conservatizing influence of adult members of the established social order, would thus be moderated in a way it was not during the 1960s.

A policy recommendation implicit in this report, as well as in state master plans and Carnegie Commission recommendations, is that the isolation of youth from the influence of parents or employers be reduced. And how is this reduction to be accomplished? An obvious solution would involve expanding two-year colleges, which are commuter colleges. Student activism in the 1960s did not occur very often on two-year campuses (Lombardi, 1968; Shea, 1973). A significant reason was the immediate influence of the student's family. Since an ever-increasing proportion of entering college students will be enrolled in commuter colleges (70 percent by the year 2000, according to a Carnegie Commission projection, 1970), an increasing proportion of youth will remain under the influence of adults for longer periods of time. The classical pattern of student activism in industrially developing countries, where educational development surpasses industrial development, is for overeducated students to participate in radical activity, partially because they cannot be absorbed in the labor force. The expansion of education at the two-year level, in addition to providing youth with the continuing close influence of adults, will provide another moderat-

ing influence: It will prevent the radicalizing effect of the lag between economic and educational development. Overeducated students, besides being underutilized and disappointed, are also, in terms of the hidden curriculum explanation described earlier, being asked *not* to make use of traits, such as autonomy and initiative, that they have had to practice to some extent in order to complete a college education.

Research suggests that (1) development during late adolescence depends on the support of peers for solutions (Katz, Korn, Ellis, Madison, Singer, Lozoff, Levin, and Sanford, 1968; Duncan, Haller, and Portes, 1968); (2) extracurricular activities provide opportunities for peer group interaction and consequent influence; and (3) to the extent college experience changes attitudes at all, more changes occur during the first two than the last two years (Milton and Shoben, 1968). From the perspective of socialization, the existence of large proportions of students in two-year rather than four-year colleges means less participation in extracurricular activities. Reasons for this low participation rate include: (1) commuting students spend little time on campus after their classes are over; (2) because students drop out, the turnover in the student body is great between the first and second years, making continuity in activities almost impossible; and (3) probabilities are high of outside employment and student obligations at home (Cohen, 1969; Monroe, 1972). It seems reasonable to conclude that the lower involvement of two-year students in activities may minimize whatever noncognitive impact the educational milieu may have on attitudes and values. And the same peer influence that limited educational aspirations in the first place stands a better chance of persisting if students commute to classes and live at home. This peer influence will not be interrupted by either a residential college environment or extensive participation in extracurricular activities.

assessing the progress of community college students

Personal progress of community college students can be assessed in several ways. First, to the extent they have been educated beyond the level of their parents, and are employed at a comparatively higher-status occupation, they clearly experience upward mobility. Although much of this may be *structural* (that is, everyone else from similar backgrounds is moving upward, too), the *subjective* experience of progress *is* personally meaningful. And this is true even though the educational *qualifications* exceed the actual

requirements of the work (educational inflation), and even though the work may be at the same time both of higher status—representing the shift from a blue-collar to a white-collar economy—and lower paying than factory work. Secondly, two-year vocational students are being prepared for available work that they will actually be doing, and this seems potentially more gratifying than either being prepared for work for which there is no demand or not being prepared for work at all. A study of *terminal* two-year graduates of vocational and transfer programs (Forgey, 1973)—students *do* end their educations in two-year transfer programs—showed that, in terms of self-reported work satisfaction, while over one third of the vocational students said "very satisfied," only 7 percent of the transfer majors said so. Also, while 4 percent of vocational students reported dissatisfaction with their work, over half the terminal transfer students reported dissatisfaction. Evidence such as this permits some assessment of the progress community college students potentially experience.

conclusion

We know that economic success (as defined by differences in men's incomes) is affected more by noncognitive than cognitive variables, and that while there has been no public concerted effort to socialize students beyond cognitive learning, students *do* get socialized in schools, but chiefly to the extent of reinforcing preexisting differences (Jencks and others, 1972). Attempts to orient curriculum toward the development of capacities to deal with people rather than just ideas *may* have the effect of giving two-year students an advantage over their counterparts in four-year institutions, which, with all their emphasis on the arts and sciences, have the major effect of teaching students how to learn, but in a way that employs only a fraction of human ability. Even though this ability to manipulate abstractions requires only one tenth of the known human abilities according to some theorists (Taylor, 1968), we continue to overemphasize the importance of the conventional indicators of progress—grades and verbal achievement scores. Other indicators of progress may be much more useful in measuring how education facilitates student progress.

In 1938, Katherine M. Denworth, President of the American Association of Junior Colleges, in an address on the role of the junior college, modestly declared, "We shall, when necessary, teach etiquette and good taste in personal grooming. We shall habituate

good posture and shall impart the fundamentals of hygienic living" (Davis, 1939, p. 8). Not since the original finishing school orientation of two-year colleges in the 1930s, as reflected in this address, has the obligation of education to the development of the person rather than the mind received so many concrete strategies as proposed in *Accent on Learning*, by K. Patricia Cross (1976), including "interpersonal skills," "learning about people from people," and "use of group experience in higher education." This plea to devise ways to develop these noncognitive traits in two-year colleges by using nontraditional methods devised originally for disadvantaged students seems to offer great promise for what colleges can do to contribute to students' economic success. If such teaching strategies *can* be successful, the cultivation of these capacities for dealing with *people as well as ideas* are certain to contribute to students' future work performance. Such an attempt is welcome: Education has focused primarily on the teaching of cognitive skills, and this is probably why—when it had any noncognitive impact at all—education merely extended existing differences. Innovative teaching could have an impact on students like nothing the traditional arts and sciences curriculum oriented toward graduate school has had, *providing these traits can be successfully taught in schools*. But that awaits implementation.

As Cross says, ideally two-year colleges would evaluate students in terms of the student's own educational, personal, and career objectives rather than only in terms of grades and attrition rates. The exclusive concern with academic achievement has resulted in the reported failure of previous innovative programs, owing to their lack of impact on cognitive development. Indeed, the conclusion of the Coleman Report that schools do not make much difference had to be drastically qualified: Differences in school resources have little effect on student performance on *verbal achievement tests*. As stated before, it is difficult to demonstrate that an indicator such as grade-point average is related to anything other than performance on aptitude tests; it certainly does not seem useful in predicting a successful career (for example, McClelland, 1973). Jencks (1972) concluded that differences in cognitive performance explain only one quarter of the variation in income, the rest being explained by a combination of luck and unspecified noncognitive attributes. Cross (1976, p. 15) concurs: "High achievement in the traditional curriculum is not the key to later success. I suspect, however, that learning to achieve and to capitalize on one's best talents may have a great deal to do with self-fulfillment, and perhaps with success."

Therefore, until we have improved specification of what it is that causes some people to succeed in acquiring more of what is valued in this society, whether this involves self-fulfillment or material acquisition, we will do well to experiment creatively with curricular reform. Curricular decisions made on the basis of assessments of student progress along noncognitive dimensions should be made cautiously, however, given our lack of indicators of noncognitive development. And improvement in the measurement of noncognitive traits is required before the effectiveness of such innovations as those prescribed by Cross can be assessed.

Nevertheless, in the last analysis, the change in *status* rather than any change in the student may turn out to be the most important fact of education. And this is true even if two-year colleges, through innovative teaching, succeed at developing the kinds of noncognitive skills that help explain success in some occupations, such as managing, leading, negotiating, persuading, entertaining, supervising, and instructing. Of what utility are such skills if the work two-year graduates enter does not permit the expression of these skills? The status of being a two-year rather than a four-year graduate has to do with access to essentially different kinds of work. This should be kept in mind when assessing the relative progress of two-year students.

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How does a two-year college earn the right to call itself community based and performance oriented and how does it measure the degree to which those goals have been achieved?

assessing service to the community from the perspective of society

jane matson

Service to the community has been implicit in the concept of the two-year college since its origin in the early years of this century. The ideal of extending educational opportunity to as broad a cross-section of the total population as possible has been a significant factor in the development of the two-year college. While this was an underlying purpose, its implementation has not kept pace with the growth either in enrollment or in number of institutions of the two-year colleges. Their classrooms were comfortably filled, even though the range of curricular offerings often reflected a somewhat restricted range of educational needs. The initial purpose was perceived as facilitating the achievement of baccalaureate degree education for those in the community who wished to pursue that goal. Close ties existed with the public-supported K-12 systems of education and served as a foundation for the funding and implementation of postsecondary educational opportunities. The title of "junior college" was used to define the major focus of the institution on the curriculum of the first two years of the traditional four-year institutions.

It was not until there was a rising demand for the extension of educational opportunity to those not concerned with baccalaureate degrees that the two-year colleges' curricular offerings expanded into the occupational or vocational area. This became particularly significant when it was recognized that the support for the local two-year college came from all taxpayers, some of whom were unwilling to settle for a curriculum designed only for a limited proportion of the population. At the same time, those involved in the industrial and commercial operations in the community perceived the two-year college as providing an opportunity to enhance the economic welfare of the community through programs designed for preservice and inservice preparation of essential workers.

The broader community dimensions of the two-year college are of more recent origin. While the vision of the two-year college as a more broadly based community agency was seen early in its history by some far-sighted observers of the scene, the actual efforts at implementation of an educational institution serving the entire community have been emphasized only within the past decade and a half. The evolution of the community college has been described in three stages, each of which reflects a specific focus leading, ideally, to an integrated community-based educational institution assessing and meeting the needs of the entire population served by the political entity responsible for the college.

In the first stage (1850-1920), the major focus was on providing a program of study that led to transfer to a four-year institution. The second stage (1920-1945) brought the introduction of occupational programs that added a new dimension to public-supported postsecondary education. In the third stage, beginning about 1945, the concept of the institution as a community agency serving the entire population developed, suggesting the need for a complete reordering of priorities within the institution (Thornton, 1960, pp. 46-53).

Since the addition of the community dimension, the potential for the development of community-related programs has increased in geometric proportions. Once the commitment is made to serving the total community, the potential variety of offerings is almost limitless. The college becomes one of many community agencies whose responsibility is to contribute its own unique capabilities and resources to augmenting and enriching the organizational structure of the community, by which it moves toward its

goals of serving the human beings who hold membership (formal or informal) within its boundaries.

The 1960s saw a phenomenal expansion of occupational curricula in the two-year colleges. New programs appeared in response to community interest and enrollments began to grow. In 1965 it was estimated that about 13 percent of the total number of two-year college students (1,292,753) were enrolled in an occupational program. By 1970 the percentage of students enrolled in these programs had increased to approximately 30 percent of a total of 2,500,000 students. It is now estimated that occupational programs enroll almost half of the total or about 2,000,000 students. The number of programs has also increased; it is currently estimated that colleges offer as many as 1,600 different types of programs in this area.

early assessment efforts

During the phase when the emphasis was on "transfer" programs, the assessment of needs was a relatively simple matter. Even with the open-door admission policy, most students had completed high school and were headed (or claimed to be) toward a four-year college program. Assessment of need consisted, in most instances, of surveying high school graduates as a guide to curriculum planning and staffing. Evaluation of the effectiveness of the program was determined by the percentage of graduates who transferred and who had shown adequate academic performances in the transfer institution. Those who dropped out without completing the program were likely not to be considered college material, and seldom was there any analysis of the factors that contributed to the drop-out rate.

When the colleges began to include vocational and technical programs in their curricular offering, the problems of assessment of need and evaluation of effectiveness became much more complex. Curricula designed to prepare students for employment at the completion of the two-year program added complex dimensions to the college's operation. The planning and decision-making process acquired new dimensions. Historically, emphasis has been placed on the needs of employers in the community for workers who might receive the required preservice preparation in the two-year college. Surveys were conducted in an effort to identify or project the employment needs of the industrial business and service establishments of the community. On the basis of these data, collected in a variety

of ways, curricula were offered. Seldom was there more than a cursory investigation of the attractiveness to students of these occupational areas or any valid investigation of the question of whether there was an adequate supply of students who would choose to enroll in the curricula offered. The evaluation of the programs was largely based on the employability of graduates who completed the programs. If graduates or students who even partially completed a particular program found jobs with little difficulty and were able to retain jobs in the occupational area with a reasonable degree of success, the curriculum was considered to be effective. This system of evaluation worked well as long as the colleges were in a growth period, with the numbers of students, curricula, and jobs increasing at a rapid rate. There was little need to evaluate curricula in terms of comparative effectiveness. Seldom was a course of study dropped because of inadequate enrollment and even more seldom because of inadequate on-the-job performance.

One factor contributing to the persistence of curricula has been the use of advisory committees in the design and evaluation of occupational curricula. The membership of these committees usually consists of a broadly representative group of employers, union representatives and workers, as deemed most appropriate by the college administrators responsible for curriculum and institution. These committees, which typically meet at least twice in an academic year, have the responsibility for advising the college staff on the content and structure of the curriculum in terms of its suitability for preparing students for maximum employability and on-the-job performance in a specific occupational area.

While in some cases advisory committees have not been entirely effective in substantively contributing to the design, implementation, and evaluation of curricula, others have been largely responsible for maintaining a high degree of realism in the structure and content of a curriculum. To a considerable extent, the broadly based composition of the committee and the perceptions of its function held by the administrative and teaching staff are determining factors in the quality of the service provided by the committee. Advisory committees, properly constituted and utilized, can be a valuable source of data for evaluation of an area of service to the community. But there is considerable evidence that their influence has not been as broad as might have been expected, because the committees have not always been representative of all facets of the occupational area, such as long-range demand for skills, directions of technical developments in the field, and projection of markets

for products or services. Nor has there been in all cases a systematic, continuous evaluation of the outcomes of the instructional programs.

With the extremely rapid growth patterns, it is not surprising that there has been limited time and effort devoted to a thorough, ongoing assessment of need for or evaluation of outcomes of these programs. This is true not only of occupational programs, but of all the colleges' offerings. The transfer programs have had a built-in evaluation in the form of acceptance of credits by the senior institutions and the performance of students there once the transfer was effected. Occupational curricula have not had as readily available data to reflect their adequacy or effectiveness. Follow-up studies of former students in occupational areas are difficult to accomplish, time consuming, and costly. The demand and response of the community continued to be of sufficient quality and quantity to assure a college that it was performing a useful function. New colleges opened at the rate of one every week in the 1960s and enrollments increased at an average of over 15 percent each year, reaching a peak of 24 percent increase in 1965 over the previous year's enrollment. The major activity of the colleges at this stage of their development was to recruit staff, build buildings, and schedule courses at a rate sufficient to meet the numbers of students flocking to their doors in search of postsecondary education of one kind or another.

The incentive for a well organized, comprehensive system of evaluation was not great enough to induce the expenditure of time, money, or effort to identify or apply criteria of quality. It was easier to add curricula in response to an expression of interest on the part of either the potential employers, students, teaching faculty, or a combination of all three groups.

emergence of the community dimension

While the third phase of the development of two-year colleges (the community dimension) is considered to have started in the mid-1940s, it did not attract intensive attention on the part of the college until the late 1950s or early 1960s. Colleges offered a variety of services designed primarily for members of the community who were not full-time students, but these programs tended to consist primarily of the more traditional adult education, namely evening school offerings, augmented in some localities by cultural and recreational services. The fuller recognition and implementation of the community dimension and the responsibilities that it involves

is of more recent origin. Evidence that "community services" was emerging into national prominence as an essential function in the public two-year colleges was indicated by a grant in 1968 by the Kellogg Foundation for a three-year project to be carried out by the American Association of Junior Colleges. This provided impetus to the development of community services activities leading to a much broadened concept of the functions of community colleges. It should be noted that the acceptance of community service as an area of emphasis is indicated by the rapid spread of the practice of changing the official name of a college from "junior" to "community." The American Association of Junior Colleges changed its own title to American Association of Community and Junior Colleges in 1972.

This broader concept was first articulated on a national basis by Edmund J. Gleazer, Jr., President, American Association of Community and Junior Colleges. Gleazer (1974) describes the newly recognized potential for the community college to become much more closely related to its community and to utilize its own unique capabilities in contributing to the welfare of the total community. He states, "The 'new and different period' calls for a response from junior and community colleges different from the first two periods of junior college evolution. . . . But it took the social forces of the sixties to bring realization of the concepts in terms of new institutions throughout the country—colleges that, with the developing self-assurance of size and experience, could become more self-directed, less concerned about imitation of the academic ways, freer to innovate, to seek the logical educational forms derived from the characteristics of their students" (Gleazer, 1974, p. 7).

The commitment of a college to become a community-based institution dedicated to service beyond that of the more traditional collegiate-level institution is not easily made. It inevitably requires a reordering of priorities within the institution that must be carefully considered in terms of the effects on the various sectors of the college. An institution does not become a community college simply by renaming itself or publicly proclaiming its assumption of the community mantle. Action is required that may shake the institution to its foundations. It is essential that the perceptions of the major dimensions of the college's mission be shared by those responsible for designing and implementing the reshaping of the college that may be required.

Goals and objectives of the college need to be redefined in

terms of the concept of two-year colleges as community based, performance oriented. Participation in this goal-setting process by all those affected by or contributing to the college's day-to-day operation is essential. Commitment to the concept of being community based will depend to a significant degree on acceptance by all those directly or indirectly involved in the college's existence. Without this commitment, there is likely to be conflict and resistance at the worst and only minimal success at the best. The philosophic assumptions that underlie the community-based, performance-oriented institutions may differ substantively from those that have guided the college in its previous history. In order to avoid disrupting discontinuities, the implications of the operational changes resulting from shifts in emphasis in the college program must be anticipated and ways to ease the transition must be designed.

needs assessment and evaluation

Because the development of this new concept of the community college's role is relatively recent, emphasis has so far been placed on needs assessment rather than on evaluation. The focus has been on development of strategies that would enable a college to shift to a more community-based orientation, to be followed by evaluation procedures when means of meeting the assessed needs had been implemented. However, it seems evident that evaluation must accompany policies, procedures, and programs that are intended to implement any change in emphasis or orientation. The assessment and evaluation are necessarily concomitant processes. The key to evaluating the effectiveness with which a community college is serving its community depends to a significant degree on an adequate definition of the mission of the college; the assessment of needs in the community that might conceivably fall within the capabilities of the college; and the imaginative design of programs and services to meet those needs. Given these elements, strategies can then be developed to assess how well the college is meeting its expectations.

The definition of a service area in the "community" to be served ranges from a complex to a relatively simple process. If the service area of a specific college is defined by legal definition of district boundaries—as, for example, in California—the community to be served has more or less fixed parameters. While interdistrict working relationships may be developed, the major focus of the college's mission is on the geographical area included within the dis-

trict boundaries established by law. In states where there are no such restrictions on the legally defined service area, the definition of a college's target populations is more complex. An integrated process of investigation and assessment requiring a broader reach in terms of both geography and organizational components is needed when the service area boundaries are amorphous or amoebalike in their changing shapes and structures. However, it has been traditional for a college to center its attention on its immediate surrounding geographical area even in situations where a substantial proportion of its enrollees come from outside the contiguous area. A problem in the customary definition of the service area is that in too many cases it has been accepted as being defined by the groups who came to the college seeking services, who were attracted by few or very traditional recruitment techniques. The emphasis on affirmative action and service to the so-called disadvantaged has resulted in the development of outreach programs, which have produced in many colleges significant increases in the proportions and range of the total population being served by the college. However, in many instances the efforts have been sporadic and the "new students" have been expected to conform to the college as it has existed. Given changing student populations, colleges have not been sensitive to the need for changing their programs, procedures, and policies so that student needs might be more adequately met.

studying the community

Therefore, the first major task of a college in the implementation of a more community-based program is to study in as broad dimensions as possible the composition of the population structure of the service area. A valuable source that can serve as a base for this study is the information contained in the most recent U.S. Census. While there is an inevitable delay between the collection of the data and the time they are locally available, census data still constitute the most reliable source of valid information about the population as a whole. By comparison with previous census data, population trends within the service area can be identified. In many communities, there are efforts made to keep census data up-to-date through a variety of surveys sponsored by community organizations and groups for whom accurate population information is essential. For the community college, these data, which must be as accurate and complete as possible, constitute the basis for the planning process leading to a community-based educational system.

Another important element in the community assessment process is an in-depth study of the way in which the community has organized itself to provide services to its population. This involves compilation of information about community agencies involved in such areas as health, education, human resources, physical resources, transportation, and community services. If an areawide planning organization exists, its structure provides a guide to this type of community analysis. One notable example is the state of Virginia, which, through legislation, established a planning mechanism designed to improve communication among agencies at each level of government, in an effort to increase responsiveness to local needs. The state was divided into planning districts that have advisory committees to consider specific problems and make recommendations for alternative courses of action to cope with the problems. The advisory committees and related district problems are shown in the following chart (from Berghaus, 1974, p. 20).

Advisory Committee Areas of Concern	*Related District Programs*
Health	Mental Health, Drug Abuse, General Medical Care, Emergency Medical Care, Nutrition, Communicable Disease
Education	Higher, Secondary, Elementary, Vocational, Adult, Library Services, Special Education
Human Resources	Housing, Public Services and Facilities Employment, Leisure Time Activities, Commerce, Job Development
Physical Resources	Tourism, Agriculture, Forestry, Pollution Control, Minerals, Land Reclamation
Transportation	Streets and Highways, Waterways, Highway Safety, Transit, Airports, Rail
Community Services	Law Enforcement, Fire Protection and Prevention, Civil Defense, Solid Waste Management, Water Supply, Sanitary Sewers, Land Use

Although this model may require tailoring for a specific community, it can serve as a valuable guideline for the analysis of a community's organization structure. The implications for community colleges in such a system are numerous and the opportunities for

the establishment of mutually beneficial working relationship seem limitless.

Another source of vital information especially essential to the community college is related to the economic system of the area that the college serves. Colleges have been able to utilize this information more effectively than some other information largely because of the increasing importance of vocational and technical programs as college curricula became more comprehensive. Community business and industry surveys were frequently made, to serve as a basis for decisions about which vocational and technical programs were to be introduced into the college curriculum. There was rightly a concern for the employability of the graduates from such programs and steps were taken to ensure—as far as possible—that the curricula established reflected a need for trained workers and that the content of the curricula would result in appropriately prepared workers. As mentioned earlier, advisory committees in specific curricula areas have been (in addition to the more general business and industry survey of needs for workers) the major vehicle for obtaining such data. The effectiveness of the use of these advisory committees varies from college to college but they represent a strong potential force for establishing and maintaining the flow of information between college and one of its most significant constituencies.

In the effort of a college to expand its services to a larger cross-section of the total community, the needs of the groups that have been traditionally represented in the student population should not be ignored. Secondary school students still represent an important segment to be served by the community college, even though the proportion of recent high school graduates or attendees may be decreasing in some colleges. The special interest groups in the community represented by such organizations as service clubs, women's organizations, fraternal clubs, or lodges, and religious organizations have needs that should be included in any survey of potential areas of service. In addition, there are other groups and agencies within the service area that represent an important source of data in the inventory of community needs. Examples of such groups include labor unions, agencies dealing with welfare recipients, persons with all kinds of physical and developmental handicaps, the unemployed, offenders (institutionalized), exoffenders, and senior citizens. Not all of these have organized groups that can represent them in a formal manner, but they all have special needs, some of which may be related to the capability of the community

college. It is the task of the college to assess those needs so that they can be considered in the planning process.

At the present time, colleges are tackling this task of community needs assessment in a variety of ways. There is not available as yet a well-validated, comprehensive instrument that would permit the college to gather these data in a specific organized manner. Because of the wide variation in the nature of communities and their unique needs, any instrument, to have national applicability, would by necessity have to be flexible and broadly based. Many colleges, in an effort to develop the data base and design strategies for becoming more community based and performance oriented have attempted to gather these data with "home-made" devices. It is difficult to assess the effectiveness of these instruments, because each community is unique and has a combination of circumstances that require special consideration. But it seems reasonable to assume that an instrument could be devised that would be sufficiently flexible to be useful to a wide variety of community colleges. The improved efficiency in terms of cost and use of manpower is another factor that increases the attractiveness of such a procedure to a college.

A problem that may arise in the efforts to assess community needs is in the area of sampling. If the data base to be used for planning is to be reasonably accurate, it is essential that appropriate sampling techniques be employed. If sampling problems are not given adequate attention, the accumulated data may be subject to misinterpretation. In the absence of the use of statistically sound sampling techniques, questionnaires and other data-collecting devices are frequently directed to what is perceived to be the total membership of the group being studied. This almost inevitably results in a bias in the data collected, because seldom, if ever, is there a 100 percent response. For example, questionnaires included in local newspapers, shopping advertisers, or to be picked up in local business establishments frequently do not reach a representative cross-section of the population. When such techniques are used, it is essential that the demographic dimensions of the target population be well understood so that the responses can be properly interpreted. If interviews, structured or unstructured, are used, the danger of bias is even greater. It is possible that the information about the nonrespondents is equally significant to the planning process or evaluation if community needs are to be met in terms of established priorities. There have been instances where colleges have operated under the illusion that a broad cross-section of the community was

being served, when in reality only a very narrow segment was involved in college programs. The missing components of the community were not identified or recognized and, consequently, information regarding their needs was not included in the planning or implementation of the college programs. In such situations, evaluation of college effectiveness will almost inevitably reflect an unrealistic bias. In order to avoid this situation, colleges should build in safeguards, such as frequent consultation with community planning agencies, examination of available up-to-date demographic data, systematic monitoring of sources of enrolled students and investigation of potential service to significant community groups not represented in the college's current enrollment.

the planning phase

Once the community needs assessment has been completed, planning can proceed on the basis of the accumulated data. The needs of the community that seem most amenable to the capabilities and resources offered by the college can be analyzed. The establishment of priorities for services to the community is a process in which a broad cross-section of the community should be involved. Some of the factors that need to be considered are the philosophical framework established for the institution; the goals and objectives that reflect that philosophy; the extent to which other community organizations are making efforts to fill the indicated needs; the current capabilities of the college relevant to the needs; and the willingness of the power structure of the college to allocate resources for the purpose of meeting the needs. The community college has been accused of trying to be "all things to all people." It is in the priority-setting process that a strong denial of this accusation can be made. Within the framework of its mission and priorities, the community college should be attempting to use its full resources and capabilities to serve the community in as broad dimensions as possible, in ways that will most effectively contribute to moving the community forward and enhancing the quality of life for its constituent populations. Priorities, once they are agreed on, will define the target populations, the programs to be developed or continued by the college, and, to a considerable degree, the relationships among the college and other community organizations, including business and industry.

Planning then can be based on established priorities, which greatly simplifies the allocation of resources. Rather than an often

disruptive competition for a college's resources, decisions can now be made in terms of previously agreed-on priorities.

Assessment now becomes a process of checking on the quality of the tasks previously accomplished. Among the questions to be asked are:

- What evidence is there that the assessment of community needs was accurate?
- Were the priorities established valid?
- What indicators of consumer satisfactions are available?
- What steps might be taken to improve the delivery of services to the community?

the assessment or evaluation process

Many colleges have attempted to assess community needs and evaluate the success of the college in meeting those needs. A few examples may be cited. In the summer of 1974, a community college in Portland, Oregon, engaged in an assessment of the extent to which the college was "community based, performance oriented" (Yarrington, 1975, p. 9). These terms were defined as follows:

1. *Community-based.* The institution has demonstrated commitment and skill in assessing postsecondary educational needs and resources in its community and developing needed services.

2. *Performance-oriented.* The institution has demonstrated commitment and skill in evaluating its responses to identified community needs and reporting findings in terms citizens can understand.

A structured interview schedule was designed to elicit information and a selected sample of a cross-section of the community was interviewed. The results of the interviews permitted comparisons of perceptions of the college's performance among a broad variety of groups in the community and served as a base for planning of further efforts to move the college toward its goal.

An interesting concept implemented in an urban Maryland community college is designed to enable the college to respond to expressed needs in the community (Watson, 1974, p. 8). Classes are offered by the college in response to specific requests originating in community groups, and held in a wide variety of off-campus locations. The range of topics of the courses has been broad and participants have been representative of the total population in the community. Evaluation has been completed for each course and the results have been overwhelmingly favorable. The college staff in-

volved are convinced that this program has contributed to increasing the community orientation of the college and strengthened its commitment to meet the individual needs of citizens.

Other colleges have conducted studies designed to determine the needs of specific target audiences, such as members of minority groups, senior citizens, women returning to education, and unemployed workers. One such project involved an effort to determine educational and public service needs of the service area of a public television station owned and operated by a community college district in California. Another urban college sponsored a study to update the economic and sociological data on which manpower requirements, population trends, and enrollment projections were based. An increasing number of colleges are taking the "open campus" approach, offering instruction wherever potential students and space may be available.

All of these activities are predicated on the assumption that there is an unfilled need for educational services to be found in all communities. Defining these needs and locating and managing the resources needed to fill them is the most challenging task facing community colleges today.

There is no question that many community colleges are making efforts to become more useful to a more broadly-defined community. Some measure of their success is indicated in the maintenance of enrollment growth and the changing nature of the student populations. The facts that the national average age of community college students is currently estimated as ranging from twenty-five to thirty years, and that the proportion of part-time students is increasing, suggest that community colleges are serving a broad cross-section of adults. Gleazer, in a presentation to a forum of community college presidents in 1976, expressed the situation as follows: "Educational needs still exist for the mounting numbers who have moved beyond their early twenties. In fact, it would not be difficult to make the case that those needs may be more critical and more pressing in our society now as the person moved *beyond* the conventional 'college age.' Educational planning in our society therefore must be based now upon meeting the educational needs of the total population with an awareness of the differences that will exist in those needs at different age levels and conditions. Sound planning cannot be limited to factors like the number of high school graduates or the numbers of people in what we archaistically refer to as 'college age.'"

prospects

The precise dimensions of the community college of the future cannot be accurately predicted. But it seems evident that if the community college is to continue to make its unique contribution to the democratization of American education, its success will depend, in part, on its ability to assess community needs that it may rally its resources to meet. An ongoing, never completed process, it requires continual monitoring of changes occurring in a community in terms of its social, economic, and demographic characteristics. The success of a college's efforts to assess community needs, formulate plans to meet them, and evaluate the extent to which it achieves its objectives will determine to a considerable degree its ultimate survival as a vital and essential segment of American postsecondary education.

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Generalizations are made about assessing student progress in community colleges on the basis of the previous analyses.

concluding comments

leonard l. baird

This volume demonstrates several broad approaches to the assessment of students' progress, ranging from assessing academic achievement in a fairly traditional manner, to assessing the extent to which the colleges' programs meet the needs of the surrounding community. The techniques involved vary from tests of all kinds to interviews and surveys. The authors show how students' progress can be systematically studied in a variety of ways and how the assessment of students' progress serves several basic purposes:

Selecting the Best Courses of Action for Students and Colleges. Information about the kinds of students who do best in specific types of programs provides colleges with tools for selecting students for programs and for placing students in appropriate programs. Information from the several broad perspectives outlined in this volume can help decision makers make more informed decisions because they provide information about many important aspects of the decisions, including their academic, occupational, and social consequences.

Improving Students' Choices Through Guidance and Counseling. By providing counselors and students with systematic information about the outcomes to be expected by following one course of action or another, assessments of students' progress can help students make better choices. Informed with knowledge about what

has happened to similar students in the past, the counselor and the student can evaluate possibilities and make better informed decisions.

Understanding the Needs and Characteristics of Special Groups of Students. Not all students make progress in the same way or in the same directions. College officials can make better informed decisions with information about the progress of these groups.

Helping Colleges in Their Planning and Administrative Activities. Information about the progress of students on a wide variety of dimensions can help colleges set priorities, plan programs, monitor the operations of the programs, and evaluate the success of those programs.

The evidence for the role of assessments of student progress in performing these functions has been outlined in the previous pages. I believe that the college that systematically evaluates its decisions by the variety of perspectives outlined by the contributors to this volume will make its decisions more effectively, and will, in the long run, be a more effective and humane institution.

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References to additional assistance on assessment from the ERIC Clearinghouse for Junior Colleges are provided.

sources and information for assessing student learning

elizabeth rinnander

This concluding article reports on references pertinent to the assessment of student progress in nontraditional programs in the areas of assessment of prior learning and experiential learning, and evaluation in cooperative education programs. Because of space limitations, only sources appearing within the past two years are cited. Except where otherwise indicated, all sources are in the ERIC system. Information on ordering abstracts or full copies of ERIC documents appears in the list of references at the end of this article.

experiential learning: how-to's

Delaware County Community College (Pennsylvania) conducted a national survey of institutions involved with the Cooperative Assessment of Experiential Learning (CAEL) assembly, to determine national trends in the structure and financing of programs to assess experiential learning (Kray, 1974). Most colleges assign this assessment task to the Dean of Instruction, it was found, with faculty members making most of the evaluations, basing their decisions on documentation and letters of testimony provided by

the student, interviews, job descriptions, and actual examinations. Competencies, courses, and general background of the students were the commonest criteria for measurement. Since most colleges received no federal or state funding for these assessments, many had begun to charge students fees for this purpose.

The Community College of Vermont, a statewide college without walls, is often cited as an exemplary model for nontraditional education. As one might expect, this institution has developed extensive, thoughtful guidelines for assessing its students' experiential learning. *Student Self-Assessment of Non-Sponsored Learning* (1975) describes how students at CCV write their own individualized, competence-based contracts. Development of the contract includes both assessment of prior learning and planning for sponsored learning. These are integrated through a "degree development sequence" involving workshops, regular meetings with a review committee of peers and faculty, and intensive counseling support. *Contracting Materials* (1975) provides a package enabling students at the Community College of Vermont to develop and implement their own written, individualized, competence-based learning contracts. Included are an orientation package, values clarification exercises, career exploration guides, and assistance in the development of competence statements. This document would be most helpful to colleges needing concrete, "how-to" assistance with assessment of experiential learning.

Another institution sharing (via ERIC) their guidelines for translating experiential learning into academic credit is William Rainey Harper College in Illinois. Christensen (1975) supplies a statement of philosophy and rationale, instructions to both students and faculty delineating their respective roles in the crediting process, recommended format for student-generated portfolios, and guidelines for the documentation of employment, hobbies, military service, and the like. In the Morgan (1976) report, Eugene Hallongren describes the workings of a program that permits credit awarded by demonstrated competence.

acceptance of assessment programs

In many institutions, the system for assessing experiential learning is subject to heavy criticism from faculty or other segments of the college community. Involvement and articulation of all parties from the earliest possible time, plus a participatory governance structure to shape and develop policy revisions, seems to be the key

to early acceptance and successful development of a system of assessing experiential learning, according to a study by Kray and Wyman (1975). Desmarais and Wiggins (1975) surveyed 100 colleges and universities, finding that nearly two thirds of the institutions responding had some sort of credit for prior learning policy. Case studies are offered for nine programs of the respondent institutions. Kray (1975) queried nearly 600 faculty at fifty-four two- and four-year colleges, and discovered a significant difference in attitudes toward theories of learning between teachers directly involved in assessment of experiential learning and those uninvolved. Faculty who assess experiential learning tend to take the cognitive constructionist position, while those who do not tend to take a behaviorist perspective.

assessment of cooperative education

Lomen (1974) offers a handbook on cooperative education from Valley College (Los Angeles, California). Philosophy of the program, writing of student objectives, evaluation and grading procedures, and procedures for instructor and coordinator visits to students' job sites are among the salient contents of this manual. Cooperative education and prior learning are among the types of learning considered in Warren's (1974) important essay, "Awarding Credit." He offers a brief history of credit granting, and discusses uses of credit, current practices, problems in measurement of performance, and directions for the future of student assessment.

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These ERIC documents, unless otherwise indicated, are available on microfiche (MF) or in paper copy (HC) from the ERIC Document Reproduction Service (EDRS), Computer Microfilm International Corporation, P.O. Box 190, Arlington, VA 22210. The MF price for documents under 480 pages is $0.83. HC prices are: 1-25 pages, $1.67; 26-50, $2.06; 51-75, $3.50; 76-100, $4.67. For materials having more than 100 pages, add $1.34 for each 25-page increment (or fraction thereof). Postage must be added to all orders.

Abstracts of these and other documents in the Junior College Collection are available on request from the ERIC Clearinghouse for Junior Colleges, Room 96, Powell Library, University of California, Los Angeles, CA 90024.

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CLEARINGHOUSE FOR
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from the editor's notes

Assessments of student progress toward various goals can improve the decisions made by students and colleges alike. Students can plan their educational and occupational careers best with an appreciation of their chances for success in pursuing one course of action or another. Colleges can best plan their programs, organize their curricula, attempt to meet the needs of important groups, and evaluate their efforts when they have systematic and comprehensive information about their students' progress. The contributors to this volume outline a variety of approaches and techniques to assess student progress. Their suggestions and recommendations should have immediate utility for decision makers in community colleges.

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